

John Carter Brown.



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VOYAGE
IN THE WORLD

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VOYAGE
ROUND THE WORLD.

VOYAGE
AROUND THE WORLD



JOHN FRANCIS GALAUP
DE LA PÉROUSE,
Commodore in the French Navy, born at Alby in 1741.

Heath sculp.

Published as the Act directs, Nov. 1st 1798, by G. G. & J. Robinson, Paternoster Row.

W. Carter Brown

A
VOYAGE
ROUND THE WORLD,

PERFORMED

In the Years 1785, 1786, 1787, and 1788,

BY THE BOUSSOLE AND ASTROLABE,

Under the Command of

J. F. G. DE LA PÉROUSE:

PUBLISHED BY ORDER OF THE NATIONAL ASSEMBLY,

UNDER THE SUPERINTENDENCE OF

L. A. MILET-MUREAU,

Brigadier-General in the Corps of Engineers, Director of Fortifications, Member of the
Constituent Assembly, and Fellow of several literary Societies at Paris.

IN TWO VOLUMES.

ILLUSTRATED BY A VARIETY OF CHARTS AND PLATES,
IN A SEPARATE FOLIO VOLUME.

TRANSLATED FROM THE FRENCH.

VOL. I.

LONDON:

PRINTED BY A. HAMILTON,

FOR G. G. AND J. ROBINSON, PATERNOSTER-ROW;
J. EDWARDS, PALL-MALL; AND T. PAYNE, MEWS-GATE, CASTLE-STREET.

1799.

TRANSLATOR'S PREFACE.

THERE is no sort of publication that excites greater attention than books of voyages and travels. It is natural to the heart of man to desire to become acquainted with his species under all the modifications of government, civilization, and climate. Confined as we are by the laws of the universe within the petty limits of this globe of earth, man would not be the active, enterprising, and inquisitive animal he is usually described, if the student in his closet, and the merchant in his counting-house, did not feel themselves excited to observe, in the degree in which their circumstances admit, the productions, the geography, the structure, and the inhabitants of this diversified planet.

It has been a peculiarity of the present age, for various successive voyages of discovery to be made, under the patronage of different political governments, and with all the accommodations that the exchequer of those governments could afford. The record of these voyages has been particularly a subject of curiosity. They may be expected to contain greater fulness of information, and may reasonably be conceived to bear the stamp

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of a higher authenticity. In the catalogue of these, the book now laid before the world is one of the most magnificent in it's conception, and recent in it's execution.

The plan of the voyage is fully developed in the commencement of the work, and is calculated to excite interest and applause. Perhaps, for the period to which it's execution was limited, it was too comprehensive: yet, though it has undoubtedly left many important questions to be decided by succeeding navigators, it was capable of effecting much, and much was actually accomplished.

The examination of the eastern coast of Tartary, and the discovery, as it may be called, of one of the most extensive islands on the globe, separated from the continent by a strait, which was traversed in all directions, would be sufficient of themselves to recommend any voyage to public notice, and will for ever give to this importance and individuality.

On the north-western coast of America much was done towards refuting the idle notion of a navigable passage from the Pacific ocean to the Atlantic; and what la Pérouse left incomplete, in this respect, has since been fully effected by an English seaman, captain Vancouver, who was employed for three successive summers in the investigation.

There is a farther coincidence between these navigators, worthy of being pointed out. La Pérouse was of opinion,

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from every thing he saw, that the greater part of the land along which he coasted made no part of the continent, but consisted of islands; and this conjecture has been satisfactorily verified by the investigations of captain Vancouver.

In contrast with this coincidence, between two navigators unacquainted with each other's discoveries, we may mention here their both finding, upon a closer inspection, that the Behring's Bay of Cook does not exist; this acute officer having probably been deceived by the appearance which the land presents at a distance. La Pérouse, however, discovered a river on this spot, which escaped the observation of Vancouver.

With regard to natural history, an addition greatly more considerable would doubtless have been made to our stock, had the men of science, who accompanied the expedition, lived to return with the stores they had collected; or had they followed the example of their illustrious leader, in transmitting during the voyage an account of the discoveries already ascertained. The papers, however, subjoined to this work, and which in some points are extremely curious, as well as the plates accompanying it, are proofs that their labour was not entirely lost.

Independently of the professional skill and sagacity of la Pérouse, it is worthy of remark, in what language he expresses himself on different occasions, upon topics connected with authority and freedom. This is an additional fact, serving to corroborate the opinion, that the French revolution did not take

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place till the minds of the people were ripe for liberty, or at least for that degree of liberty, at which they would perhaps have rested for the present, had they been left to the naked operation of internal causes.

Of the translation it remains to be observed, that much solicitude has been employed to render it faithful, that nothing contained in the original is omitted in it, and that the whole of the nautical and other tables is given entire, and it is hoped with accuracy. The French account of Maurelle's voyage, taken from Barrington's Miscellanies, has been carefully compared with the original, by which several mistakes in it have been corrected. In the measures, those of the French have been retained, lest some mistake might have been committed in converting them into the English. This, however, the reader may easily do for himself, in any particular instance, reckoning the Parisian foot to the English as 1068 to 1000, and remembering, that the French foot, like ours, contains twelve inches, but that the French inch is divided into twelve lines instead of ten.

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THE public, familiarised to the melancholy idea of the loss of the two ships, that were sent on the unfortunate expedition undertaken by la Pérouse, will be surprised at the publication of a journal of his voyage. The decree of the constituent assembly, however, by which the charts and memoirs sent home by that navigator were directed, the one to be engraved, and the other to be printed, was sufficient to announce that we were not wholly deprived of the fruits of his labours. His foresight induced him to avail himself of every opportunity that offered, and even to seek others, of transmitting his journals to Europe; and it is much to be wished, that the men of science, who accompanied him, had not been prevented by self-love from transmitting to us their's in the same manner; as we should then not have had to regret their almost total loss.

La Pérouse, occupied by the difficult and numerous particulars attendant on the command of an important and dangerous expedition; obliged at every step, to judge of the present, and

look into the future, and consequently to modify his ideas according to circumstances; could neither digest methodically, nor arrange in order, those materials, which were to have been employed by him, in writing the history of his voyage; and in the eyes of an editor, who was altogether a stranger to the transactions recorded, these materials could not but appear still more confused.

As nothing, that can tend to promote the progress of the human understanding, ought to be omitted in a voyage of discovery, artists and men of learning form an essential part of such expeditions. Each, on his return, arranges his materials, and imparts to the particular object of his labours that degree of perfection of which he deems it susceptible: and from a well-digested combination of these different parts arises a complete narration, where every thing is connected, and every thing in its place. Here, from an unexampled fatality, all our navigators have perished; and I alone have been obliged, by collecting what has escaped the wreck, to supply the want of the true and energetic lines of those, who would have said nothing, but what themselves had felt.

In yielding, far from readily, to the solicitations which have induced me to undertake this laborious but honourable task, the difficulties, which must necessarily occur in a work, to attend equally to all the parts of which is nearly impossible, were by no means diminished to my apprehension.

The public, no doubt, will regret with me, that the late minister

of marine, Fleurieu, at present member of the national institute, and of the board of longitude, a literary character of rare and distinguished merit, who at first readily undertook the office of editor, should have been obliged by circumstances to relinquish it.

The same feelings which prompted me to display, in the tribune of the constituent assembly, such zeal for the publication of this voyage for the benefit of the deserving widow of la Pérouse, induced me to endeavour to direct the choice of government to some seaman, qualified to supply the place of him who had first been named to be it's editor; but France had already lost great part of her most distinguished naval officers, and the rest were either in employ, or had voluntarily withdrawn themselves. The minister therefore could only turn his eyes upon some individual, who at least had made natural knowledge his study, and acquired habits of accuracy from mathematical pursuits, as these essentially constitute the basis of such an undertaking. Beside, the choice of a man possessing these acquirements in preference was conformable to the wishes of la Pérouse; for he wrote to one of his friends nearly in the following terms:—" If
" my journal be published before my return, let the editing of
" it by no means be entrusted to a man of letters; for either he
" will sacrifice the proper terms, which the seaman and man of
" learning would prefer, and will look for in vain, but which to
" him will appear harsh and barbarous, to the turn of a phrase;
" or, rejecting all the nautical and astronomical details, and endeavouring to make a pleasing romance, he will commit mistakes, from a want of the knowledge his education has not

“ allowed him to acquire, which may prove fatal to those who
“ shall follow me. But choose an editor versed in the mathe-
“ matical sciences, who is capable of calculating and comparing
“ my data with those of other navigators, of rectifying errors
“ which may have escaped me, and of guarding himself against
“ the commission of others. Such an editor will preserve the
“ substance of the work; will omit nothing, that is essential;
“ will give technical details in the harsh and rude, but concise
“ style of a seaman; and will well perform his task, in supply-
“ ing my place, and publishing the work such as I would have
“ done myself.”

This wish having served me constantly as a guide, those readers, who have no other object but amusement, need not proceed any farther; I have not laboured for them, but for the seaman and man of learning. In a work, where the matter demands more attention than the manner, and where fidelity in facts, and accuracy of expression, are the most important qualities, clearness and precision have been my aim, and I have never sacrificed to elegance, at the expence of truth. Let this confession be at once my excuse, and my plea for the reader's indulgence.

With this view I have scrupulously preserved the character of each writer's style, merely subjecting it to the established rules of the language; though, when some idea has occurred to me, which might serve to connect the rest, some expression, that might complete an image, render it more striking, or give greater harmony to a period, without altering it's substance, I have thought myself at liberty to employ it.

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No doubt the following work would have been more valuable, had it come from the pen of the late minister Fleurieu, who would have enriched it with his own profound knowledge: I must inform the reader, however, that I have consulted him on every occasion, when I had any doubts; and always found in him that modesty and complaisance which are the inseparable companions of true knowledge and talents.

If to collect, arrange, and digest properly all the parts of such a work, were a difficult enterprise, the details of publication, the labours, the researches, the steps which nothing but the most active zeal could support, and the delays induced by imperious circumstances, would seem sufficient to render it impracticable.

The publication was decreed in 1791; and in 1793, when I was engaged for it, nothing was begun. The decreasing value of paper-money induced the artists and tradesmen to recede from their agreements, almost as soon as they were formed; or frustrate my exertions by the most provoking inactivity, arising from the hope of better times. Opinion, bordering on madness, required the denominations and customs of another period, to be accommodated to the times, in defiance of the truth of history, which obliged me to remain inactive in this respect for more than a year. At length a new kind of paper-money was issued, and the finances were in a state of embarrassment, when specie re-appeared. Such were the physical and moral causes of the delay to which I was exposed.

To enable me to surmount the difficulties arising from the circumstances of the moment, I was strongly urged to write this voyage in the third person. Thus becoming an historian, and appropriating to myself the materials of the work, I should have thrown the navigator into the shade, by placing myself between him and the reader. This proposal did not seduce my self-love, which I sacrificed to the interest, always excited by a man, who relates what he has felt, who describes the perilous situations in which he has been placed, and who makes the reader the companion of his pleasures and his pains.

If circumstances fettered me during my progress, and surrounded my path with obstacles, the result will at least evince, that the government has not ceased to protect the arts and sciences, during the course of the most astonishing of revolutions, which has excited against it a war as general as it is burdensome.

Having explained the nature and difficulties of my undertaking, I have now to speak of the form of the work, its arrangement, and the care that has been taken in the execution of its mechanical part.

The title of a Voyage round the World, which I have given it, though strictly speaking it could not claim this without the return of la Pérouse to some port of France, assuredly will not be disputed; since a voyage round the world may be considered as ended, when a ship, that has sailed from Europe, has

doubled Cape Horn, and arrived at China through the Pacific Ocean. Beside, did not our navigators, in the course of the year succeeding their arrival at China, perform a longer, more brilliant, and more dangerous voyage, than would have been that of their simple return to Europe?

The work consisting of four volumes 4to*, and one of charts and plates in folio, is divided in the following manner:

The first volume contains all the preliminary pieces respecting the expedition; to which I have added only the translation of a Spanish voyage, the manuscript of which was sent home by la Pérouse, and which I could not have placed elsewhere, without rendering the volumes too unequal in bulk.

A celebrated author has rescued from oblivion the magnanimous self-devotion of Dassas, who sacrificed his life to save the French army, crying out: "This way, Auvergne! here are the enemy!" The Parisian Society of Natural History had the merit of calling the attention of the representatives of the nation to the expedition of la Pérouse, by the petition, which it presented on the 22d of January 1791. The national assembly delayed not to take it into consideration, notwithstanding the importance of the labours, on which it was employed.

* In the present translation the whole is comprised in two volumes 4to, with the charts and plates in a separate folio volume, as in the original. The first two volumes are completely included in one, and the last two in another, by reducing the size of the type, enlarging that of the page, and allowing a few more sheets to each volume, so as to render the work somewhat cheaper than it could otherwise have been, without any diminution of its beauty or utility. T.

The two decrees, passed in consequence, equally honourable to those who were the subjects of them, and to those by whom they were voted, are placed at the beginning of the work. They breathe the sentiments of humanity and feeling, and say in words immortal to all who may be desirous of treading in the steps of la Pérouse ; “ When you have run your career, amid the dangers of every kind with which you are surrounded, you may rest assured, if you fall, that your grateful country will emblazon your names with honour in the temple of Memory.”

I have not confined myself to the custom of recording the names of the officers and men of science alone engaged in such an expedition : the publication of an exact list of the crews appears to me more agreeable to justice, and the principles of the French government : at the same time I conceived, that this list would be the only register, to which the families of our unfortunate seamen could hereafter refer.

The instructions, and geographical notes, which follow, and which are the work of Fleurieu the late minister of marine, constitute a model of too much value, to be withheld from the public. Beside, it is the only answer I shall deign to make to a note of George Forster, which had a tendency to vilify the motive of this expedition, which was the advancement of science alone*. I am sorry, that a man, whom I esteem, should have

* Part of the instructions will show, that the advancement of science was not it's sole object. T

himself as follows in his *Historical and Picturesque Tour on the Banks of the Rhine*: vol. i. p. 311, of the French translation.

“At the time when the unfortunate and interesting la Pérouse departed to make new acquisitions for philosophy and commerce, a minister presented to the council a memorial on the incalculable advantages of the enterprise. This memorial, though long, was read with eagerness; yet it contained but a single idea, which was this: ‘Sire,’ said the minister, ‘would you divert your subjects from this dangerous anglomania, this passion for liberty, destructive of peace and good order, amuse them with new ideas, give them food for their idle hours, the poignancy and variety of which may cherish the frivolous turn of their minds. They had better be employed in admiring the ridiculous tricks of a few Chinese apes, than in following the fashion of the day, which leads them to admire the horses and philosophers of England.’”

The second and third volumes contain the whole of the journal of the voyage, and the tables of the route of the two ships, in which will be found the result of the astronomical and meteorological observations.

To the progress of astronomy we are indebted for the means of determining the longitude at sea with great precision: and when the public are informed, that the astronomer Dagelet, member of the Academy of Sciences, had the superintendence

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of this department, they cannot fail to have the greatest confidence in his accuracy, and that of the tables and charts depending on it.

If the journal do not always agree with the tables and charts, it is owing to the impracticability of delaying the printing till the whole could be completely compared and verified. Such differences, however, will not be frequent, or of much importance: and when they occur, the preference ought to be given to the tables, and more particularly to the charts, which have been executed under the direction of the first hydrographer to the navy, Buache, member of the National Institute, and of the Board of Longitude. I owe him here particular thanks, for his readiness to assist me by his exertions in this important part.

The longitudes throughout the work, when the meridian is not mentioned, are reckoned from that of Paris*.

I have aimed at accuracy in writing proper names; but the names of places being as variously given in different accounts as the languages of their authors are dissimilar, it was necessary, in writing these words of pure convention, to follow the orthography most generally received, adapting it to the idiom of the country.

The fourth volume is composed of memoirs, or detached

* The meridian of Paris is $2^{\circ} 20'$ east of Greenwich. T.

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papers, sent to government by the men of science employed in the expedition, with such others as I have been able to collect. For this purpose I made the necessary application to the late Academy of Sciences, and such individuals as I suspected might have had correspondents among the companions of la Pérouse; but in vain: for I have obtained only those, of which scattered fragments have appeared in journals of natural philosophy, and these I have been eager to add to this volume.

In the course of the work I have added notes, wherever I thought they might be of utility; and I have distinguished them by the initials of the words note of the editor*.

The number, size, and beauty of the charts and other engravings, have induced me to unite them in a separate volume of a larger size. A national work, executed with such attention, appeared to me to merit this care for their preservation. If it be not generally approved, I shall answer, that such is the form of the elegant edition of Cook's third Voyage, published by order of the English government, and at its expence.

That the work might at length be finished, I found myself obliged to distribute the drawings, entrusted at first to five artists of known talents, to a greater number of engravers; whence a little want of uniformity, and inequality of perfection, have necessarily

* *Note du Rédacteur*, N. D. R. In the present translation these are signed (French Editor): the few by the translator are marked with a T: those without any signature, when they occur in the journal, are by la Pérouse; in the other papers, by the writer of them. T.

ensued; though I have neglected nothing, to render it as little perceptible as possible*.

If this work be such, as might have been hoped from the materials put into my hands, and after the unexpected loss of our navigators, my most pleasing reward will be, to have fulfilled the views of government, and given my assistance towards that monument of gratitude, which it has thought fit to erect to their memory.

* In the present translation, we trust, there is no reason for this complaint: the whole of the charts having been engraved by Neele, and the plates chiefly by Heath. T.

INTRODUCTION

BY

THE EDITOR.

BY the reception which all Europe has given to the narratives of the late voyages round the globe, it has appeared to manifest it's good wishes for the progress of the natural and physical sciences. But it must be confessed, among the numerous admirers of works of this kind, some have had nothing more than amusement in view; the object of others has been, by proudly comparing our customs and manners with those of savages, to establish the superiority of civilised man over man uncivilised; while men of learning alone, and these are the smaller number, have sought, and almost always found, materials for extending their knowledge.

The accounts of voyages of discovery may be reckoned among the most interesting books of modern history. Man, naturally the admirer of what is new and extraordinary, transports him-

self in imagination to distant regions; puts himself into the place of the navigator; shares his dangers and his escapes, his pains and his pleasures; and becomes his inseparable companion, through the variety of objects, which excite his attachment, or feed his curiosity.

In this point of view, extracts of voyages, such as Prevost has given, divested of all the dry and tedious particulars that relate to astronomy and navigation, are unquestionably more agreeable to the reader than the originals. But these extracts are not the source to which the seaman and man of science will resort: since the materials, after thus passing through the literary crucible, though they come out more light and brilliant, no longer possess that solid principle which constitutes science, and which alteration destroys.

Almost all the authors or translators of works of the nature of the present have enumerated the voyages that have preceded those they publish, and the discoveries that have resulted from them. Thus they have given a sketch of the acquisitions made by geography, while they point out the works in which they are recorded. I shall not here repeat those particulars which are to be found elsewhere; but shall content myself with giving a more complete chronological list of the principal voyages, to which we are indebted for discoveries in the Pacific Ocean.

Magellan, a Portuguese, in the service of Spain	-	-	1519
Garcia de Loaes, or Loaysa, a Portuguese, in the same service			1525
Alphonso de Salazar, a Spaniard	-	-	1525
Alvarez Saavedra, a Spaniard	-	-	1526

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Ferdinand Grijalva, and Alvaredo, Spaniards	-	-	1537
Gaëtan, a Spaniard	-	-	1542
Alvarez de Mendaña, a Spaniard	-	-	1567
Juan Fernandes, a Spaniard	-	-	1576
Sir Francis Drake, an Englishman	-	-	1577
Thomas Candish, or Cavendish, an Englishman	-	-	1586
Sir Richard Hawkins, an Englishman	-	-	1594
Alvarez de Mendaña, a Spaniard	-	-	1595
Oliver van Noort, a Dutchman	-	-	1598
Pedro Fernandes de Quiros, and Luigo Vaes de Torrez, Spaniards			1606
George Spilberg, a Dutchman	-	-	1614
Le Maire and Schouten, Dutchmen	-	-	1616
L'Hermite, a Dutchman	-	-	1623
Abel Tasman, a Dutchman	-	-	1642
Antony la Roche, a Frenchman	-	-	1675
Cowley, an Englishman	-	-	1683
Dampier, an Englishman	-	-	1687
Davis, an Englishman	-	-	1687
John Strong, an Englishman	-	-	1689
Gemelli Carreri, a Neapolitan	-	-	1693
Beauchêne Gouin, a Frenchman	-	-	1699
William Funnell, an Englishman	-	-	1703
Woodes Rogers, an Englishman	-	-	1708
Lewis Feuillée, a Frenchman	-	-	1708
Frézier, a Frenchman	-	-	1712
Gentil de la Barbinais, a Frenchman	-	-	1715
John Clipperton and George Shelvocke, Englishmen	-	-	1719
Roggewein, a Dutchman	-	-	1722
Anson, an Englishman	-	-	1741
Le Hen-Brignon, a Frenchman	-	-	1747
Byron, an Englishman	-	-	1764
Wallis, an Englishman	-	-	1766
Carteret, an Englishman	-	-	1766
Pagès, a Frenchman	-	-	1766
Bougainville, a Frenchman	-	-	1766

Cook, an Englishman	- - - - -	1769
Surville, a Frenchman	- - - - -	1769
Marion and du Clesmeur, Frenchmen	- - - - -	1771
Cook, an Englishman	- - - - -	1772
Cook, Clerke, and Gore, Englishmen	- - - - -	1775

Cook's last voyage was known only by the death of the illustrious commander of the expedition, when France, availing herself of the leisure arising from the peace she had just concluded, conceived her rank among the maritime powers, and still more her ardour and her means for the advancement of science, called upon her to fit out an expedition on a voyage of discovery, that she might contribute her share to the completion of our knowledge of that globe, which has so long been the habitation of man. If in the present day we have advanced so far in it's examination, if the situation of each of it's known parts be henceforth fixed, if every step carry us nearer to our end; we are indebted for this to the progress of astronomy. In the distances of certain stars, the motion of which is calculated with precision, astronomy presents us with certain bases, which enable us to determine the longitude, with sufficient accuracy to render navigation secure, in the midst of a vast sea, where heretofore it was estimated only by approximation almost at random, whence the greatest errors were liable to accrue. The benefit thus conferred on us by astronomy ensures us in future the fruit of our expeditions, and a knowledge of geography scarcely short of perfection.

There are means, unquestionably, of accelerating this desirable object; and this is a proper place for offering a few hints on

a matter of so much importance. These means might be combined in a kind of congress, formed of agents from the principal maritime powers, that might be desirous of sharing the glory of such an enterprise.

This congress, composed of astronomers, hydrographers, and mariners, should turn it's attention to all the ancient discoveries, which have not been recognised in modern days ; to all those parts of the globe, where discoveries remain to be made or completed, or particulars to be investigated ; to the seasons in all the latitudes of either hemisphere, the prevailing winds, monsoons, currents, refreshments and assistance that may be obtained, &c.

These inquiries should constitute the basis of a set of general instructions, to be given to the commanders of a grand expedition ; and, that the plans of several might not tend to the same object, the sum of the discoveries to be made should be divided among the maritime powers of Europe, paying attention to their possessions and settlements, which might render particular enterprises more easy to particular powers.

Would England, Spain, Holland, Portugal, Russia, the United States of America, and France, be at the expense of an expedition every three years, we may venture to affirm, that, in the course of twenty, geography would have attained it's utmost height.

France would unquestionably have continued to promote the progress of geography, if interests more important, and an expensive war carried on to support them, had not employed her entirely, and demanded all her resources for some years past. Peace, however, recalling the attention of government in great measure to the arts and sciences, promises new expeditions for their advantage.

When enterprises are undertaken with grand views, all the sciences are gainers by it. Though the philosopher is seldom fond of quitting his home, he fails not to reap the fruits of voyages. Ready to collect the observations of the navigator, he seizes his ideas, investigates them, connects them with the general system, while he analyses and classes the sensations from which they have sprung, and thus gives new life to every branch of science.

If navigation, thus ennobled, must powerfully contribute to extend the limits of human knowledge, it is for the government to call forth the exertions of talents, recompense their success, collect and publish the discoveries, receive and reflect all the rays of thought and views of genius, and attach to itself, from every point of the globe, men who for their merits and labours belong to all countries, as well as to all ages, without paying any attention to their opinion on subjects already left at a distance, and of which we ought to consider only the result, which may prove favourable to the execution of the proposed plan, when a general peace shall be established.

This plan would lead to the examination of some questions of importance to geography, and particularly that of an universal meridian; for there is no geographer, who has not experienced the inconveniences arising from the difference of the meridians employed in charts. This obliges us to be continually on our guard against errors; the least comparison to be made between different meridians requiring additions or subtractions. Navigators have given occasion to this, by employing in their charts the meridian adopted by the nation to which they belong, or frequently, indeed, a particular one of their own. On the other hand, some have reckoned their longitude westerly, others easterly, round the globe. Others, and these the greater number among the moderns, have divided their longitude into east and west: but, the difference between the meridians of their antipodes being the same as those of their observatories in Europe, it followed from this division, that the longitude was called east by one, where it was called west by another, in the opposite hemisphere, as well as in this. Hence errors arise, which would be avoided by reckoning the longitudes uniformly as far as 360° , and agreeing to calculate them to the west. The only objection, to be made to this method of computation is, that it does not always give a clear idea of the distance by the number of degrees: as far as 180° , the antipodes of the meridian, it is obvious, the distance and the number of degrees would accord; but beyond this point every one is not sufficiently instructed to conceive, that 200° of longitude are nearer to the meridian from which the reckoning begins than 180° ,

while by saying 160° of longitude east, instead of 200° of longitude, no one can be at a loss about the distance.

It must be confessed, the objection against reckoning to 360° is of very little weight, compared with the advantage of a simple proceeding, liable to no error; an advantage not to be rejected in favour of those few, who are incapable of learning to judge of the little distance between their meridian, and that which is $359^{\circ} 59'$ from it.

The advantage of this mode of reckoning the longitude to 360° , however, is trifling, compared with that of the adoption of a common meridian, to serve in future as a base to the geography of all nations. I am sufficiently aware, that self-love will urge each to prefer it's own: but, setting aside all private considerations, the meridian, which appears most eligible to be adopted, because it cuts very little land, and leaves the meridians of the maritime powers of Europe to the east, is that of the remarkable peak, which nature seems to have placed in the midst of the sea, to serve as a pharos to navigators, the peak of Teneriffe. A pyramid, constructed at the expense of the associated powers, should be erected on the point through which the meridian line is to pass; and a committee of astronomers, chosen from the members of the proposed union, should determine, by a series of calculations, the exact difference between this common meridian and those of the principal observatories of both hemispheres.

These calculations, the accuracy of which would be unquestionable from the perfection of our methods, would remove all uncertainty respecting the sum to be added or subtracted in comparing one meridian with another; and they would settle the differences arising in the results of their comparisons obtained at different periods, which might be taken for errors, were it not remembered, that astronomers, from recent observations made with more care and better instruments, have changed the difference of longitude that had been fixed between the meridians of the observatories of Paris and Greenwich. This difference, which was considered as $2^{\circ} 19'$, has been found to be $2^{\circ} 20'$; or, if strict accuracy were required, $2^{\circ} 20' 15''$, or $9' 21''$ of time, to which it must be carried on account of the flattening of the poles, supposing this to be $\frac{1}{330}$, conformably to the observations of Lalande, with whose merit the whole world is acquainted, and in whose calculations perspicuity and precision are united in a very high degree.

The idea of a common meridian, which I here propose at the head of a journal of a grand voyage, originated from the reflections suggested to me by an examination of the work, when preparing it for the press. It has smiled on me in the midst of my labour; it may not be generally approved; but I may be allowed to express my wishes for its adoption, till its inconveniences, if it have any, be demonstrated.

This new meridian would not in the least diminish the value of the vast materials in geography we possess: if it would,

every thought of it should be discarded, as I reject, for the present, though with great regret, that of the new division of the circle, because it has the serious defect of nearly annihilating them: for this it was necessary I should assign a reason, and here it does not lead me from my subject.

Though no one can be more partial to the decimal mode of calculation, which is discussed with so much justice in the writings of the learned and ingenious Borda, as well as in those of the other members of the temporary committee of weights and measures, I cannot dissemble the inconveniences attending the division of the circle into 400 degrees. These are so great, that it is impossible for them to disappear, till several ages have elapsed after the period of its general adoption, during which both divisions must be retained, to facilitate the labour of comparing our new charts with those of other powers, and the ancient materials of geography.

If that portion of time, which is termed a day, accord with the decimal division, the annual revolution of the sun will not conform to it. Since, then, there is in nature a limit to decimal calculation, and it cannot divide the solar revolution, why should it be employed in the division of the circle?

It may be said, that this division of the circle into 400 degrees, perfectly adapts itself to that of the day into ten hours, the hour into a hundred minutes, and the minute into a hundred seconds; which makes a degree of the circle correspond with

two minutes and a half of time. It may be observed too, and justly, that the basis of all measures, called a *mètre*, being taken from nature, and formed of the ten-thousandth part of the quarter of the meridian, the result is a natural decimal division, since the degree is found to contain a hundred thousand *mètres*, or twenty leagues of five thousand *mètres* each. But these advantages, and that of offering in general a constant scale for the degree and its subdivisions, cannot remove the inconveniences arising from the changes proposed.

The grand idea of rendering our weights and measures uniform has given birth to the sublime thought of seeking a standard in nature. This standard is in fact precisely what we should find in an enlightened nation, completely unknown to us, if such nation had made the same progress in the arts and sciences, and conceived like us the design of establishing an uniformity of weights and measures, by taking its basis from nature.

What opportunity more favourable for discussing the advantages and inconveniences of adopting an uniformity of weights and measures, and the decimal division, could offer itself, than that of a congress composed of the representatives of all the most celebrated learned societies throughout the world? If the different governments should consent to embrace this uniformity and this division, supposing they should be judged advantageous, their simultaneous and universal admission would enhance the benefit; and then the greatest exertions might be

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He was in 1765, on board the *flûte* Adour ;
 1766, on board the *flûte* Gave ;
 1767, commander of the *flûte* Adour ;
 1768, commander of the *Dorothée* ;
 1769, commander of the *Bugalet* ;
 1771, on board the *Belle-Poule* ;
 1771, ditto ;
 1773,]
 1774,] Commander of the *flûte* Seine, and the
 1775,] *Deux-Amis*, on the coast of Malabar ; first
 1776,] lieutenant from the 4th of April, 1777.
 1777,]

In the year 1778 a war broke out between France and England ; hostilities commencing on the 17th of June with the capture of the *Belle-Poule*.

In 1779 la Pérouse commanded the *Amazon*, belonging to the squadron under vice-admiral d'Estaing. To protect the landing of the troops at Grenada, he anchored within pistol-shot of one of the enemies batteries. When the squadron engaged that of admiral Byron, his post was to carry his admirals orders to the whole of the line. Lastly, he took the sloop *Ariel* on the coast of New England, and contributed to the capture of the *Experiment*.

Being appointed captain on the 4th of April, 1780, he commanded the frigate *Astrea*, when, being on a cruise with the *Her-*

mione, captain la Touche, he had a very obstinate engagement, on the 21st of July, with six English vessels of war, six leagues from the north point of Cape Breton. Five of these vessels, the Allegiance, of twenty-four guns, the Vernon, of the same force, the Charles-Town, of twenty-eight, the Jack, of fourteen, and the Vulture, of twenty, formed a line to receive them; the sixth, the Thompson, of eighteen guns, kept out of gun-shot. The two frigates bore down upon the enemy, with all their sails set. It was seven in the evening, when the first shot was fired. They ran along the English line to leeward, to cut off from them every hope of escape. The Thompson remained constantly to windward. The two frigates manœuvred with such skill, that the little English squadron was soon thrown into disorder; and in half an hour, the Charles-Town, the commodore, was obliged to strike, as was the Jack. The other three would have experienced the same fate, if night had not favoured their escape.

The following year the French government formed the design of destroying the English settlements in Hudson's Bay. La Pérouse was deemed a fit person for this arduous expedition in a dangerous sea; and received orders for his departure from Cape Français on the 31st of May, 1782. He had the command of the Sceptre, a seventy-four, and was accompanied by the Astrée and Engageante frigates, of six and thirty guns each, commanded by captains de Langle and la Jaille. On board these vessels were embarked two hundred and fifty foot, forty artillery-men, four field-pieces, two mortars, and three hundred shells.

On the 17th of July he made Resolution Island, but he had scarcely advanced five and twenty leagues into Hudson's Strait, when his ships were entangled in the ice, and received considerable damage.

On the 30th, after a continual struggle against obstacles of every kind, he made Cape Walsingham, in the westernmost part of the strait. Purposing to commence his attack with Prince of Wales's Fort, he had not a moment to lose, as the severity of the weather obliges all vessels to quit this sea in the beginning of September; but as soon as he had entered Hudson's Bay, he was surrounded with fog, and on the 3d of August, the first time of it's clearing up, he perceived himself encompassed with ice, as far as he could see, which obliged him to bring to. He surmounted every obstacle, however, and on the evening of the 8th discovered the flag flying on Prince of Wales's Fort. The French vessels advanced within a league of it, heaving the lead all the way, and anchored in eighteen fathoms, muddy bottom. An officer, sent to reconnoitre the approach to the fort, reported, that the vessels might come to an anchor with a spring upon their cables at a very little distance from it. La Pérouse, not doubting, that the Sceptre alone could easily reduce the fort, if any resistance were offered, made the necessary preparations for disembarking his troops in the night. The tide and the darkness gave them some trouble, yet the long-boats landed only three quarters of a league from the fort without opposition. Though the fort appeared to be capable of making a vigorous resistance, as la Pérouse per-

ceived no preparation for defense, he sent the enemy a summons; on which the gates were opened, and the governor and garrison surrendered at discretion.

Having executed this part of his orders, he set sail for Fort York on the 11th of August. In his way thither he experienced still greater difficulties than he had hitherto encountered; being obliged to navigate his ships in six or seven fathoms water, along a coast studded with shoals. After having run the most imminent risks, the Sceptre and the two frigates made the entrance of Nelson's river, and anchored about five leagues from the land on the 20th of August.

La Pérouse had taken three decked boats at Prince of Wales's Fort, and these he sent, with the Sceptre's cutter, to reconnoitre Hayes River, near which stood Fort York.

On the 21st of August the troops landed in the long-boats; and la Pérouse, having nothing to fear from the enemy by sea, thought it his duty to take the command of the disembarkation.

Hayes Island, on which Fort York is built, lies at the mouth of a large river, divided into two branches. That which runs by the fort bears the name of Hayes River; the other, of Nelson's. The French commander knew, that all the means of defence were confined to the former; and beside, a vessel belonging to the Hudson's Bay Company, mounting twenty-five nine-pounders, was anchored in it's mouth. He deter-

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mined, therefore, to advance by the way of Nelson's River, though on that side his troops would have about four leagues to march; but then they could gain the advantage of rendering the batteries on Hayes River useless.

On the evening of the 21st they arrived at the mouth of Nelson's river, with two hundred and fifty soldiers, mortars, cannon, and provision for a week, that they might have no occasion to be supplied from the ships, with which they could not easily keep up a communication. La Pérouse ordered the long-boats to anchor at the mouth of the river, in three fathoms water; and proceeded himself in his barge, accompanied by de Langle, his second in command; Rostaing, the commanding officer of the land forces; and Monneron, engineer captain, to sound the river, and explore the banks, where he apprehended the enemy might have erected some defensive works.

This expedition convinced him, that the shore was inaccessible. The smallest boats could scarcely approach within two hundred yards of it, and thence to the shore the men must wade through soft mud. Accordingly he judged it expedient to remain at anchor, and wait for day-light; but the tide falling much more than was expected, the long-boats were found to be dry aground at three in the morning.

Exasperated instead of being discouraged by this obstacle, all the troops disembarked; and, after having waded half leg high through the mud for a quarter of a league, they reached

a meadow, on which they formed. Thence they marched on towards a wood, where they expected to find a firm path leading to the fort. They could discover none, however; and spent the whole day in looking for a road that did not exist.

La Pérouse directed the engineer, captain Monneron, to mark out one through the middle of the wood by the compass. This laborious task being executed, taught them that they would have two leagues of marshy ground to cross, in many parts of which the men would sink up to the knees in mud. A gale of wind, coming on in the night, made la Pérouse uneasy to join his ships, and he returned to the shore; but the storm continuing, he could not embark. On it's abating, he availed himself of the interval, and reached his vessel the next day, only an hour before a second gale of wind sprung up. An officer, who set off at the same time with him, was cast away. Fortunately he got on shore with his crew, but it was three days before they returned on board, naked, and famished with hunger. The *Engageante* and *Astrée* lost two anchors each in this second gale of wind.

The troops, notwithstanding, arrived before the fort on the morning of the 24th, after a very toilsome march, and it surrendered on the first summons. La Pérouse ordered the fort to be destroyed, and the troops to reembark without delay.

This order was frustrated by another gale of wind, which ex-

posed the *Engageante* to the most imminent danger: her small bower anchor broke, her tiller was sprung, and her long-boat was lost. The *Sceptre* lost her long-boat also, her cutter, and an anchor.

At length the weather became fair, and the troops re-embarked. *La Pérouse*, having on board the governors of Prince of Wales's and York Forts, set sail, to get clear of these seas, exposed to ice and storms, and where his military successes, obtained without resistance, had been preceded by such dangers and toils.

Though *la Pérouse*, as a military man, was obliged, in obedience to strict orders, to destroy the possessions of our enemies, he did not forget the respect due to misfortune. Knowing, that, at his approach, some of the English had fled into the woods; and that his departure, now the settlements were destroyed, would expose them to die of hunger, or to fall defenceless into the hands of the savages; he had the humanity to leave them arms and provision.

Can there be a more flattering eulogy on this subject, than the frank avowal of an English seaman, in his account of a voyage to Botany Bay? "This humane and generous man ought to be remembered with gratitude, in England particularly, for his conduct when ordered to destroy our settlement in Hudson's Bay last war."

After this just and honest testimony, and when England had deserved so well of every friend to the arts and sciences, by her readiness to publish the results of the voyages of discovery she has achieved, shall we have to reproach another Englishman for having failed to fulfil his engagements with *la Pérouse*?

In the year 1772, governor Hearne made a journey to the north, setting off from Fort Churchill, in Hudson's Bay, the particulars of which are expected with impatience. An account of this journey was found in manuscript among the papers of the governor, who was very pressing that it should be returned to him as his private property. As the journey was undertaken, however, by order of the Hudson's Bay Company, with a view of obtaining knowledge of the northern part of America, the journal of it might have been considered with propriety as belonging to the company, and now of right devolved to the conqueror; yet the goodness of *la Pérouse's* heart induced him to yield to the urgent solicitations of governor Hearne, and he returned the manuscript to him; on the express condition, however, that he should print and publish it immediately on his arrival in England. This agreement does not appear to have been fulfilled to the present day. Let us hope, that the remark here made, when it becomes public, will effect the purpose, or at least induce the governor to inform us, whether the Hudson's Bay Company, which is extremely jealous of any interference in its affairs and its trade, have objected to its publication*.

* I was not acquainted with the anecdote here related, when I wrote the note in p. 415. (French Editor.)

In the note here alluded to the editor seems too much biassed by his favourite notion of a

The re-establishment of peace with England in 1783 put an end to this campaign : but the indefatigable la Pérouse did not long enjoy repose ; another expedition of more importance awaited him, unfortunately destined to be his last. He was appointed, in the year 1785, to the command of a voyage round the world, the preparations for which were making at Brest.

I shall not follow the custom, in pointing out before-hand the route which our navigator pursued in the two hemispheres, the coasts and islands, which he reconnoitred or explored in the Pacific Ocean, the discoveries which he made in the Asiatic seas, and the important services which he rendered to geography. This sacrifice I make to the reader, whose curiosity would rather be excited than forestalled, and who unquestionably would prefer to follow the course of the voyager himself.

Hitherto I have considered la Pérouse only in his military and naval capacity ; but he deserves equally to be known for

north-west passage, to consider, that la Pérouse saw, and no doubt read with attention, the original journal of the voyage, intended by Hearne for the perusal of himself and his employers only ; and in which, of course, there could be no intention of deceiving from motives of policy, whatever there might be in the narrative published, with which the editor appears to have been unacquainted. We must add, that an account of this journey, performed in the years 1769, 1770, 1771, and 1772, was published in the year 1795 : not, however, in consequence of the promise to la Pérouse, but because some particulars of it had transpired, which were, or which the company wished to persuade the world were, erroneous. The latter seems the most probable : or why should the company, to which the public is very little indebted for any kind of information, have kept the account secret so long ? There is little doubt, too, but that Mr Hearne would readily have fulfilled his engagement to la Pérouse, as the publication could not have failed to have been profitable to himself, had he not been prevented by the Hudson's Bay Company, as Mr Milet-Mureau conjectures. T.

his personal qualities: for he was not less fitted to gain the friendship or respect of men of all countries, than to foresee and overcome every obstacle, which it is within the power of human wisdom to surmount.

With the vivacity common to the people of the south, he united a pleasing wit, and an evenness of temper. The gentleness of his disposition, and his agreeable gaiety, rendered his company always desired with avidity: on the other hand, his judgment having been matured by long experience, he joined to singular prudence that firmness of character, which is the lot of a strong mind, and which, increased by the laborious life of a mariner, rendered him capable of attempting the greatest enterprizes, and conducting them to success.

From the combination of these different qualities, the reader, observing his invincible patience under toils enjoined by circumstances, the rigorous counsels dictated by his foresight, the precautionary steps he took with different people, will be little astonished at the beneficent and temperate yet circumspect conduct of la Pérouse towards them, at the confidence he reposed, and the deference he sometimes paid to his officers, and at the paternal care he exhibited towards his crews. Nothing that could concern them, either in preventing their hardships, or promoting their welfare, escaped his watchfulness and care. Unwilling to convert a scientific enterprise into a mercantile speculation, and leaving the profit of all the articles of trade to

the crew alone, he reserved for himself the satisfaction of having been useful to his country and to science. Ably seconded in his cares for the preservation of their health, no navigator has made so long a voyage, accomplished such an extensive course, and been exposed to such incessant change of climate, with such healthy crews, since, on their arrival at New Holland, after a voyage of thirty months duration, in which they had sailed more than sixteen thousand leagues, they were in as good health as on their departure from Brest.

Master of himself, and never suffering himself to be carried away by the first impression, he was capable of practising, particularly in this expedition, the precepts of a sound and humane philosophy. Were I more desirous of composing his eulogy, necessarily isolated and incomplete, than of allowing the reader the pleasure of forming his own judgment of him from facts, with all their concomitant circumstances, and from the whole of what he has written, I should quote a number of passages in his journal, the character and turn of which, scrupulously preserved by me, faithfully depict the man: I should exhibit him particularly careful to follow that article of his instructions, deeply imprinted on his heart, by which he was enjoined, to avoid spilling a drop of blood; adhering to it constantly during a long voyage, with a success owing to his principles; and when, in consequence of an attack from a barbarous horde of savages, he had lost his second in command, a naturalist*, and ten men of the two crews, notwithstanding the

* In fact he lost two naturalists on this occasion, as father Receveur likewise died of his

powerful means of vengeance in his hands, and so many excusable motives for employing them, restraining the rage of his people, and fearing to destroy a single innocent victim among thousands of the guilty.

Not less modest and equitable than he was enlightened, it will be seen with what respect he mentions the immortal Cook, and how he endeavoured to do justice to those great men, who had pursued the same career.

Equally just towards all, la Pérouse, in his journal and in his letters, equitably dispenses the praise, to which his companions had a claim. Nor is he less mindful of those strangers, who received him with friendship, and afforded him assistance, in different parts of the world. If government, of which there can be no doubt, wish to fulfil the intentions of la Pérouse, it owes to these a testimonial of the public gratitude.

Justly esteemed by those English mariners, who had opportunities of knowing him, they have unequivocally testified their respect for him in their writings.

All those who are acquainted with him, have bestowed on him the justest eulogies, which it would take up too much room to recite.

wounds, while the ships lay at Botany-Bay, and was buried there. An inscription was erected to his memory, but destroyed by the natives soon after the departure of the ships. Governor Philip caused it to be re-engraved on copper, and set up afresh. See Philip's Voyage to Botany-Bay, Ch. X. T.

But to speak of his virtues and his talents, is to recal to mind our misfortunes, and awaken our regret : the remembrance of the one is inseparably connected with the idea of the other, and both will for ever constitute the basis of a monument of grief and gratitude, in the heart of every friend to science and humanity. If I feel any pleasure after the painful task imposed upon me in this work, and after the care and trouble it has cost me previous to it's publication, it is unquestionably at this moment, when I am permitted to be the organ of the French republic, in paying the tribute of national gratitude to his memory.

La Pérouse, according to his last letters from Botany Bay, ought to have reached the Isle of France in 1788*. The two succeeding years having passed away, the mind of the French nation could not be diverted from the fate, which was to be apprehended from our navigators, by the important events, that occupied and fixed the attention of all France. The first demand on this head, the first expressions of fear and sorrow, were heard at the bar of the national assembly from the members of the society of natural history.

“ For two years,” said they, “ France has in vain expected the return of M^r de la Pérouse ; and they, who are interested in his discoveries, or personally concerned for him, have not the least knowledge of his fate. Alas ! what they suspect is

* See Extract of a Letter from la Pérouse, dated Botany Bay, February the 7th, 1788, in vol. ii. p. 479.

perhaps more dreadful than what he has experienced: perhaps he has escaped death only to suffer the continual torment of hope continually reviving, continually disappointed: perhaps he has been wrecked on some of the South-Sea islands, where he stretches forth his arms towards his country, and vainly expects a deliverer.....

“ It was not for trifling objects, it was not for his private emolument, that M^r de la Pérouse braved all kinds of danger. That generous nation, which was to reap the fruit of his labours, owes him attention and assistance :

“ We have already learned the fate of several of his companions, swallowed up by the waves, or massacred by savages: cherish the hope we have, of saving those of our brethren, who have escaped the fury of the waves, or the rage of cannibals; let them return to our shores, though they should die with joy, on seeing this land of freedom.....”

The demand of the society of natural history excited the liveliest emotions, and was quickly followed by a decree, enjoining the equipment of two frigates, to proceed in search of la Pérouse.

The motives from which the decree was passed, and the terms in which it was reported, evince the tender and affectionate sentiments inspired by our navigators, and the eagerness with which

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the slightest glimpse of hope was seized, in the desire of finding them, without thinking on the great sacrifices the search would require :

“ Long have our wishes called for M^r de la Pérouse, and the companions of his glorious, too probably likewise unfortunate voyage.

“ The society of naturalists in this metropolis has just rent the veil, which you dared not remove : the mourning is become general, and you appeared to embrace with transport the idea it suggested of sending vessels in search of M^r de la Pérouse. You have ordered your committees of maritime affairs, agriculture, and commerce, to submit to you their thoughts on such an interesting subject ; and the sentiment, which appears to have produced your determination, has likewise dictated their opinion.

“ We have scarcely the consolation to entertain the least doubt, that M^r de la Pérouse has experienced some terrible disaster.

“ We cannot reasonably hope, that his vessels still plough the seas : either he and his companions are no more ; or, cast on some desert shore, lost in the immensity of unknown seas, and confined to the extremity of the globe, they have to contend, perhaps, against the climate, against beasts, against men, against nature herself, and call for succour on their country,

which can only form conjectures of their misfortune. Perhaps they have been wrecked on some unknown coast, on some barren rock. There, if they have found a hospitable people, they breathe indeed, yet call on you: if they have fallen on a desert, perhaps wild fruits and shell-fish alone preserve their existence; fixed on the shore, their eyes wandering over the distant seas, to espy the happy sails, which may waft them to France, to their relations, to their friends.

“ Reduced to embrace an idea, which, perhaps, is but a consolatory error, you are no doubt induced like us, to prefer this conjecture to the afflicting thought of their loss: an idea, which the Parisian society of naturalists has just submitted to you, and which M^r de la Borde had already suggested to every susceptible heart in a memoir read at the academy of sciences.

“ But if you be moved, if you be struck by this idea, you will no longer give way to unavailing regret: humanity enjoins, that we fly to the assistance of our brethren. Alas! where shall we seek for them? of whom shall we inquire after their fate? Is it possible to explore all the coasts of a sea in some degree unknown? to touch at all the islands of those vast groupes, which threaten the navigator with such numerous perils? to visit every gulf? to penetrate into every bay? Even were we to land on the island, in which they are concealed, might we not miss them in one part, while we visited another?

“ Unquestionably the difficulties are great, success almost

more than can be hoped; yet the motives for the attempt are strong. It is possible, that our unfortunate brethren are stretching out their arms to us for assistance; and that we should restore them to their country, is no impossibility: we cannot be permitted, therefore, to decline a research, which at least will redound to our honour. This we owe to men, who have devoted their lives for us: this we owe to the sciences, that expect to reap the fruit of their labours. What ought to excite us still more is, that M^r de la Pérouse was not one of those adventurers, who court great enterprises, either to procure wealth, or acquire fame: he was not even ambitious of commanding the expedition, with which he was charged; he would have wished he could refuse it; and when he accepted the command, his friends knew, that he resigned himself to his fate.....

“ Fortunately we are acquainted with the track, to be pursued in this melancholy search: fortunately we can put into the hands of those, who may have the charge of this affecting mission, a clew to guide them through the dangerous labyrinth, which they will be destined to explore.

“ The proposal of search, which humanity enjoins, cannot be brought before this tribunal, to be combated by parsimony, or discussed by frigid reason, when our feelings ought to decide.

“ To M^r de la Pérouse, or to his memory, this expedition will be the most glorious recompense, with which you can

honour his labours, his sacrifices, or his misfortunes. It is thus, that rewards should be conferred.

“ Actions like these render illustrious the nation, that is capable of them; and the sentiment of humanity, by which they are dictated, will characterise our age. The European no longer visits the remotest shores, to invade and despoil them; but to confer benefits, and dispense the means of enjoyment: not to plunder the metals, that foster corruption; but to procure those useful vegetables, which serve to render man's life more easy and agreeable. Lastly pious navigators will be seen, and savage nations will not behold them without being softened, affectionately inquiring after the fate of their brethren, at the extremities of the globe, of men and deserts, of rocks, caverns, and shoals: they will be seen in the most treacherous seas, in the windings of the most dangerous archipelagoes, around islands peopled with cannibals, wandering in search of their fellows, to rush into their arms, to succour, and to save them.”

Scarcely had the ships sent in quest of la Pérouse departed, when a rumour was spread, that a Dutch captain, passing by the Admiralty Islands, to the west of New Ireland, had seen a canoe, manned by the natives, who appeared to him to be dressed in the uniform of the French navy.

General d'Entrecasteaux, who had the command of this expedition, having stopped at the Cape of Good Hope, was in-

formed of this report; and notwithstanding it's feeble authenticity, and the little probability of it's truth, he hesitated not a moment to change his course, and hasten to the place indicated. His ardour being unaccompanied by success, he recommenced his search, in the track pointed out by his instructions; and he finished it, without being able to obtain the least information, or the slightest probability respecting the fate of our unfortunate navigator.

Different conjectures respecting the cause of his loss have been framed in France. Some, not knowing the course he had to pursue from Botany Bay, which is traced out in his last letter, have advanced, that his ships were caught in the ice, and that *la Pérouse* with all his companions had perished by the most horrible of all deaths: others have said, that, as he was to arrive at the Isle of France toward the end of 1788, he must have fallen a victim to that violent hurricane, which was so fatal to the frigate *Venus*, never heard of since, and in which the *Resolution* lost all her masts.

Though we cannot contradict the latter assertion, it ought not to be admitted without proof. If it be not the truth, *la Pérouse* must probably have perished in a gale of wind, on some one of the numerous reefs, with which the groupes of islands he had still to explore might be supposed to be studded, as in fact they were found to be by general d'Entrecasteaux. The mode in which the two vessels sailed, always within hail, would render the same shoal fatal to both; so that at length

they experienced the misfortune, to which they were so near on the 6th. of November, 1786, and were swallowed up by the waves, without being able to reach any land.

The sole hope, that can remain is, that they may have been wrecked on the shores of some uninhabited island; in which case it is possible, that some individuals of either crew may still exist on one of the innumerable islands in those archipelagoes. Remote from the track pursued, they may have escaped the search, and can be restored to their country only by some chance conveying a vessel to them, they being probably destitute of every means of constructing one themselves.

It is impossible to avoid observing, however, that savages make very long voyages in simple canoes; and it may be judged, from an inspection of the map, that, if the shipwrecked mariners had landed, either on a desert island, or among savages, by whom their lives had been spared, they would have been able, in the course of nine years, to have gotten by degrees to some place, from which we should have heard news of them; for it is probable that they would have left no means unattempted to extricate themselves from a state of anxiety and seclusion, to which death itself would be preferable. If, therefore, any hope remain, it must be at best very slight.

A navigator has asserted, that he had seen indications of the shipwreck of *la Pérouse*. That the reader may judge of the

confidence they deserve, I shall give his deposition literally, without indulging myself in any remarks, farther than confronting the author with himself, and comparing what he says with the narrative of Bougainville.

Extract from the minutes of the justice of peace of the city and commune of Morlaix.

“George Bowen, captain of the ship *Albemarle*, on her voyage from Bombay to London, brought into Morlaix, being interrogated respecting what he knew of *la Pérouse*, who sailed from France on a voyage round the world, made answer, that, in December, 1791, being on his return from Port Jackson to Bombay, he himself saw, on the coast of New Georgia *, in the eastern ocean, part of the wreck of *M^e de la Pérouse's* ship, floating on the water †, and that he imagines it to have belonged to a French-built ship: that he did not go ashore, but that the natives of the country came aboard his vessel: that he could not understand their language, but that he conceived, from their signs, some ship had visited those parts: that these people were acquainted with the use of several implements of iron, of which they were very desirous: that he, the depo-

* Explored by lieutenant Shortland, of the English navy, in 1788; but discovered in part by Bougainville in 1768, and still farther by Surville, captain of a French East-Indiaman, who named it *Terre des Arsacides*, the Land of the Arsacides. (French Editor.)

† *La Pérouse* must have been lost in 1788. I leave it to those, who are acquainted with the effects of the waves on a shipwrecked vessel, to judge whether these remains could still exist floating on the water at the end of December, 1791. (French Editor.)

ment, had bartered several iron articles with these Indians for beads and bows: that, with regard to the character of these Indians, they appeared to him to be peaceable*, and better informed than the inhabitants of Otaheite, since they had a perfect knowledge of the implements of iron: that their canoes were made in a superior manner: that, when the natives were on board his ship, he did not yet know any thing of the wreck, but sailing along the coast, he perceived it about midnight, on the 30th of December, 1791, by the light of a large fire, which was burning on the land†: that, had it not been for this fire, he should probably have run on the rocks of Cape Deception. The deponent farther declares, that all along this part of the coast of New Georgia he observed a great number of cabins, or huts: that these Indians were of a stout make, and gentle disposition, whence he presumes, that, if M^r de la Pérouse, or any of his crew, were on the land, they are still living‡: and that he knows, of all the vessels which have navigated these seas, none but M^r de Bougainville, the Alexander, the Friendship, of London, M^r de la Pérouse, and the deponent, ever were at this place; consequently he presumes, the wreck must

* These Indians, described as peaceable people, attacked Bougainville's longboats, which he had sent ashore for water, the moment they entered into Baie de Choiseul. (French Editor.)

† It is surprising, that the wreck, seen by George Bowen, and asserted to be that of la Pérouse's ship, and of French construction, whence we must suppose it to have been considerable in size, and examined with attention by a person very near, should have been merely perceived at midnight, by the light of a fire on the land. (French Editor.)

‡ Bougainville, being obliged to repel the attack of the Indians by force, seized two of their canoes, in one of which he found, among other things, a *human jaw half roasted*, no dubious proof of cannibalism. (French Editor.)

have belonged to the ship of M' de la Pérouse*, since the Alexander was sunk in the strait of Macassar, and the Friendship arrived safe in England. Being interrogated, whether he had seen any garments upon the natives of the country, denoting them to have had communication with Europeans, he answered, that these Indians were naked: that the climate is very hot, and that he understood by their signs, that they had seen ships before: that he saw in the possession of these Indians fishing-nets, the threads of which were made of flax, and the meshes were of European workmanship†: that he took a piece of one out of curiosity, from which it would be easy to judge, that the materials and workmanship were European."

These are all the tokens of the fate of our navigator that have been obtained to the present day.

Still there are public indications of the track he pursued, and the places he visited, subsisting in the medals struck on occasion of the voyage, and left or distributed by la Pérouse during the course of it. About a hundred in silver or bronze had been delivered to him, with six hundred others of different kinds. As we know what part of the voyage remained for him

* The English captain no longer gives it as certain, that the wreck seen was that of la Pérouse's ship: it is now but a simple presumption. (French Editor.)

† Bougainville found in the canoes, which fell into his hands, *nets with very fine meshes, and skilfully constructed*. It is probable, that their perfection led George Bowen into an error. (French Editor.)

to perform, these medals may some day show nearly the place where it was interrupted by his loss.

As the medal relative to the voyage, become an historical document, may be met with at some future period by the navigators, I cannot refrain from making it known, though I have not thought proper to give an engraving of it. On one side it has the effigy of the king, with the usual legend: on the reverse is the following inscription, within two olive branches, tied by a riband:

Les frégates du roi de France, la Boussole et l'Astrolabe, commandées par MM. de la Pérouse et de Langle, parties du port de Brest en Juin 1785.

“The Boussole and Astrolabe, frigates belonging to the king of France, commanded by M^{essrs} de la Pérouse and de Langle, sailed from Brest in June 1785.”

So many precautions taken for the success and authenticity of a grand expedition, the expense occasioned by it, and it's concomitant toils and misfortunes, will induce some prejudiced systematics to question, whether these cares and toils be sufficiently compensated, by the reciprocal benefits men derive from voyages of discovery. For my part, though I cannot bring myself to acknowledge the introduction of domestic animals, or a few farinaceous plants, into a savage nation, as any

benefit, when weighed against the evils that accrue to it, from the false or superficial notions it's people imbibe from our principles, and from the sudden communication of our manners and customs; in other words, though I am of opinion, that, after having imparted to them unconnected articles of knowledge, which they can neither understand nor apply, and vegetables and animals, which they neither cultivate nor preserve, to abandon them to themselves, is to render vain the desire of knowledge and enjoyment excited in them, and is in reality, to contribute to their unhappiness: yet to raise them by degrees, in order to civilize them, to give them morals before we give them manners, and not to impart to them new wants, or new arts, till we furnish them with the means of satisfying the one, and using the other to advantage, is to prepare and secure to their posterity the happy consequences ensuing from the improvement of the human faculties.

Though inconveniences may arise to them and to us from such an intercourse, where the relations between the two parties are so different, the great advantages the arts and sciences derive from voyages of discovery cannot reasonably be disputed. Civilised man feels a necessity of proportioning his knowledge and enjoyments to the capacity of his intellect and the extent of his desires. The navigator, as he advances, finds new productions advantageous to mankind; discovers the various parts of the globe, and gives security to his own course and that of others; teaches men to form a due judgment of their fellows

from a greater number of points of comparison; and every new step he takes is an advancement towards the knowledge of man and of nature. It is noble, it is lovely, thus to incur expence, and to run risks, for the necessities of society at large, and the augmentation of true riches.

If some philosophers have condemned voyages in general, because expeditions undertaken with ambitious and interested views have led to acts of barbarity, it is unquestionably from their having confounded these with voyages of discovery, the objects of which have been, to confer benefits on remote nations, and extend the boundaries of science.

These benefits, perhaps it may be said, are the price of their blood; since they are to be kept in order only by the employment of force, which, becoming fatal to the navigators themselves, occasions a double crime in the eyes of nature and of philosophy.

But let us consult navigators noted for their moderation, and their narratives will convince us, that, if we resort to the precautions suggested by prudence, it is easy to restrain savages by the simple display of force: speedily attached by acts of kindness to voyagers whom they respect, they are susceptible of gratitude, consequently of every other sentiment.

Justice, however, should be done to the motive, by which these philosophers have been misled: this respectable motive is

humanity. In future we must be of one opinion, observing the conduct of our navigators, and their extreme respect for the lives of savages, who destroy one another on the slightest pretence; seeing the ferocity of these softened by civilization; and considering the vast quantity of blood spared by the abolition of human sacrifices, so revolting to our feelings, and so generally practised in savage nations.

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VOYAGE ROUND THE WORLD,

In the Years 1785, 1786, 1787, and 1788.

DECREE OF THE NATIONAL ASSEMBLY,

FEBRUARY 9, 1791.

THE National Assembly, after having heard the report of it's united committees of agriculture, commerce, and naval affairs, decrees:

That the king be requested to give orders to all the ambassadors, residents, consuls, and agents, of the nation, in foreign countries, to intreat, in the name of humanity, and of the arts and sciences, the different sovereigns of the nations in which they reside, to enjoin all navigators and agents of every description under their command, wherever they may be, but particularly in the southern part of the Pacific Ocean, to make all possible search after the two French frigates, *la Boussole* and *l'Astrolabe*, commanded by M^r de la Pérouse, and after their crews; as likewise every inquiry, that may serve to confirm to us whether they be yet in being, or have been lost; in order, that, if M^r de la Pérouse and his companions should be found, or met with, no matter

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VOYAGE ROUND THE WORLD.

in what place, every assistance may be given them, and they may be furnished with all possible means of returning to their country, and bringing with them whatever they may have in their possession: the national assembly engaging to indemnify, and even to recompense, according to the importance of the service, every one that may furnish any assistance to these navigators, procure intelligence of them, or merely be the cause of restoring to France any papers or effects, that may belong or have belonged to their expedition:

It farther decrees, that the king be requested to equip one or more vessels, on board which shall be embarked men of science, naturalists, and draughtsmen; and to confer on the commanders of the expedition the double mission of seeking after M^r de la Pérouse, in conformity to documents, instructions, and orders, which shall be given them; and at the same time of making researches with regard to the sciences and commerce, taking every measure to render the expedition, independently of the search after M^r de la Pérouse, or even after they may have found him, or obtained news of him, useful and advantageous to navigation, geography, commerce, arts, and science.

Collated with the original, by us the president and secretaries of the national assembly. - Paris, February 24, 1791. *Signed* Duport, president; Lioré, Boussion, secretaries.

DECREE OF THE NATIONAL ASSEMBLY,

APRIL 22, 1791.

THE National Assembly decrees :

That the accounts and maps, sent by M^r de la Pérouse, of part of his voyage, as far as to Botany Bay, shall be printed and engraved at the expense of the nation ; and that the expense shall be defrayed from the fund of two millions * granted by the fourteenth article of the decree of August 3, 1790 :

That, as soon as the edition is finished, and such copies as the king may think proper to dispose of are taken from it, the remainder be sent to M^{me} de la Pérouse, with a copy of the present decree, as a testimony of satisfaction at M^r de la Pérouse's devotion to the common weal, and to the promotion of knowledge and useful discoveries :

That M^r de la Pérouse shall still remain on the navy list, till the return of the vessels sent in search of him, and that his pay shall continue to be received by his wife, conformably to the directions given by him previous to his departure.

Collated with the original, by us the president and secretaries of the national assembly. Paris, April 25, 1791. Signed Reubell, president ; Goupil-Préfeln, Mougins-Roquefort, Roger, secretaries.

* £.83,333. 6s. 8d.

VOYAGE ROUND THE WORLD.

GENERAL LIST

OF THE

OFFICERS, MEN OF SCIENCE, ARTISTS, SEAMEN, AND
MARINES, EMBARKED ON BOARD THE FRIGATES LA
BOUSSOLE AND L'ASTROLABE, UNDER THE COMMAND
OF M. DE LA PÉROUSE.

JULY, 1785.

LA BOUSSOLE.

Messrs.
De la Pérouse - - - -

{ Post captain, commander in chief, employed a
commodore, and promoted to a broad pendant,
Nov. 2, 1786.

Lieutenants.

De Clonard - - - -
D' Escures.

{ Acting as captain to the commodore, promoted
to the rank of post captain.

Ensigns.

Boutin - - - -

{ Made lieutenant of a man of war, May 1, 1786,
and commanding officer of marines, April 14,
1788.

De Pierrevet. - - - -

Colinet - - - -

{ Lieutenant of a frigate, made sub-lieutenant
of a man of war, May 1, 1786.

Midshipmen.

Mel de Saint-Céran - - - -
De Montarnal.

Discharged at Manilla, April 16, 1787.

De Roux Darbaud - - - -

{ Volunteer, made cadet, January 1, 1786; and
lieutenant of a man of war, April 14, 1786.

Frederic Broudon - - - -

{ Volunteer, made lieutenant of a man of war,
August 1, 1786.

VOYAGE ROUND THE WORLD.

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Engineers, Men of Science, and Artists.

De Monneron	-	-	-	-	{ Captain in the corps of engineers, engineer in chief.
Bernizet	-	-	-	-	Engineer and geographer.
Rollin	-	-	-	-	Surgeon-major, who had retired on half-pay.
Lepaute Dagelet	-	-	-	-	{ Of the academy of sciences, professor at the military school, astronomer.
De Lamanon	-	-	-	-	{ Natural philosopher, mineralogist, meteorologist.
Abbé Mongès	-	-	-	-	{ Regular canon of the Gallican church, natural philosopher, and doing the duty of chaplain.
Duché de Vancy	-	-	-	-	Draughtsman of landscape and figures.
Prevost junior	-	-	-	-	Botanical draughtsman.
Collignon	-	-	-	-	Gardener and botanist.
Guery	-	-	-	-	Watchmaker.

Warrant and petty Officers.

James Darris	-	-	-	-	Master (premier maître d'équipage).
Stephen Lormier	-	-	-	-	Ditto.
Vincent le Fur	-	-	-	-	Boatswain.
Jeremy Laprise Mouton	-	-	-	-	Made sub-lieutenant of a man of war.
Francis Tayer	-	-	-	-	Boatswain's mate.
Francis Ropars	-	-	-	-	Ditto.
John Michael le Bec	-	-	-	-	Quarter-master.
John Baptist le Maître	-	-	-	-	Second pilot.
Eutropius Faure	-	-	-	-	Pilot's mate.

Gunners and Marines.

Peter Talin	-	-	-	-	Quarter-master of marines, and gunner.
Edme Francis Matthew Livierre	-	-	-	-	Gunner's mate.
Anthony Flhire	-	-	-	-	Corporal.
Francis Diege	-	-	-	-	Marine.
George Fleury	-	-	-	-	Ditto.
John Bolet	-	-	-	-	Ditto.
Peter Lieutot	-	-	-	-	Ditto.
Stephen Dutertre	-	-	-	-	Drummer.

Carpenters, Caulkers, and Sail-makers.

Peter Charron	-	-	-	-	Carpenter.
John Baptist Francis Soudé	-	-	-	-	Carpenter's mate.
Andrew Chauve	-	-	-	-	Ditto.
Peter Meschin	-	-	-	-	Caulker.

VOYAGE ROUND THE WORLD.

Claude Nevin	-	-	-	-	Caulker's mate.
John Faudil	-	-	-	-	Ditto.
Alexander Moreau	-	-	-	-	Ditto.
James Francheteau	-	-	-	-	Sail-maker.
Andrew Verrier	-	-	-	-	Sail-maker's mate.
Laurence Pointel	-	-	-	-	Ditto.

Able and ordinary Seamen.

William Durand.	Paul Joseph Bertelé.
John Masson.	John Magneur.
James Pochic.	John Francis Duquesne
Julian Hellec.	Andrew Mary le Brice.
Francis Gorin.	Bertram Daniel.
Peter Bretau.	John Garnier.
John Frichoux.	Lewis le Bot.
William Stephan.	Allen Abgral.
Peter Mary Lastennec.	Charles Anthony Chauvry.
John Gohonnec.	Francis Gloahec.
Yves le Bihan.	Joseph le Bas.
Corentin Jers.	Joseph Plevin.
John Luco.	John Daran.
Lewis Plemer.	John Donety.
Francis Lhostis.	Peter Achard.
John Mary Dreau.	William Pichard.
Allen Marzin.	Hilarion Mary Noret.
Peter Bonny.	John Peter Chevreuil.
Charles le Duc.	Julian Robert.

Gunner's Crew.

César Augustin de Rozier.	Peter Prieur.
Michael Berrin.	Marens Chaub.
Francis Joseph Vautron.	John Peter Fraicho.
Andrew Roth.	Peter Guillemin.
John Blondeau.	John Gillet.
Michael Niterhoffer.	Joseph Rayes.

Supernumeraries.

John Querenneur	-	-	-	-	Coasting pilot
James le Car	-	-	-	-	Surgeon's mate.
John Louvigni	-	-	-	-	Captain's clerk.
Simon Rolland	-	-	-	-	Cooper.
Joseph Vanneau	-	-	-	-	Baker.

VOYAGE ROUND THE WORLD.

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John Peter Durand	-	-	-	-	Armourer.
John Mary Bleas	-	-	-	-	Smith.
René Mary Cosquet	-	-	-	-	Carpenter.
James Quinion	-	-	-	-	Cook.

Servants.

Peter Cazaurant.	René de St. Maurice.
John Francis Bisalion.	Lewis David.
Francis Bretel.	Benjamin (a negro).
Michael Siron.	

Additional.

Guyet de la Villeneuve	-	-	-	-	Entered at Manilla, April 7, 1787.
John Charles Massepin	-	-	-	-	Marine.
Dominic Champion	-	-	-	-	Ditto.
Peter Lebis	-	-	-	-	Ditto.
John Jugon	-	-	-	-	Ditto.
Peter Motte	-	-	-	-	Ditto.
Six Chinese sailors.					

L'ASTROLABE.

Messrs.

De Langle	-	-	-	-	Post captain, commander.
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Lieutenant.

De Monti	-	-	-	-	Made post captain.
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Ensigns.

Freton de Vaujuas.

Daigremont.

De la Borde Marchainville	-	-	-	-	Supernumerary.
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Blondela	-	-	-	-	Lieutenant of a frigate.
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Midshipmen.

De la Borde Boutervilliers	-	-	-	-	Made lieutenant of a man of war, May 1, 1786.
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Law de Lauriston	-	-	-	-	Ditto.
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Raxi de Flassan	-	-	-	-	<div style="display: inline-block; vertical-align: middle;"> <div style="font-size: 2em; vertical-align: middle;">{</div> Supernumerary, made lieutenant of a man of war, May 1, 1786. </div>
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Men of Science and Artists.

Monge	-	-	-	-	<div style="display: inline-block; vertical-align: middle;"> <div style="font-size: 2em; vertical-align: middle;">{</div> Professor at the military school, astronomer; put on shore at Teneriffe, August 29, 1785. </div>
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VOYAGE ROUND THE WORLD.

De la Martinière	-	-	-	Doctor of physic, botanist.
Dufresne	-	-	-	Naturalist.
Father Receveur	-	-	-	{ Cordelier, naturalist, and doing the duty of chaplain.
Prevost, the uncle	-	-	-	Botanical draughtsman.
Lavaux	-	-	-	Navy surgeon.
Lesseps	-	-	-	{ Russian vice-consul, interpreter; put on shore at Kamtschatka, and charged with M ^r de la Pérouse's dispatches to Paris.

Warrant and petty Officers.

Francis Lamare	-	-	-	Boatswain.
Francis Mary Audignon	-	-	-	Ditto, supernumerary.
Sebastian Rolland	-	-	-	Boatswain's mate.
William Mary Gaudebert	-	-	-	Ditto.
Mathurin Léon	-	-	-	First pilot.
Adrian de Mavel	-	-	-	Second pilot.
Peter Brossard	-	-	-	{ Pilot's mate, made sub-lieutenant of a man of war.
John l'Ainé	-	-	-	Pilot's mate.

Gunners.

John Gaulin	-	-	-	Serjeant of marines, gunner.
Leonard Soulas	-	-	-	Corporal, gunner's mate.
James Morel	-	-	-	Quarter-gunner.
Peter Chauvin	-	-	-	Ditto.
Peter Philiby	-	-	-	Ditto.
Francis Saulot	-	-	-	Ditto.
Christopher Gilbert	-	-	-	Corporal, quarter-gunner.
John Peter Huguet	-	-	-	Drummer, ditto.

Carpenters, Caulkers, and Sail-makers.

Robert Mary le Gal	-	-	-	Carpenter.
John Berny	-	-	-	Carpenter's mate.
Francis Bizieu	-	-	-	Ditto.
John le Cam	-	-	-	Ditto.
John Francis Paul	-	-	-	Caulker.
Lewis Mevel	-	-	-	Ditto.
Yves Quelenec	-	-	-	Ditto.
Francis Leboucher	-	-	-	Caulker's mate.
John Grosset	-	-	-	Sail-maker.
Oliver Creachadec	-	-	-	Sail-maker's mate.

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Yves Bourhis	-	-	-	-	Ditto.
Bastien Taniou	-	-	-	-	Quarter-master's mate.

Able and ordinary Seamen.

Lewis Alles.	Lewis Mezon.
Peter Mary Rio.	William Quedec.
John Moal.	Peter Fouache.
Joseph le Quellec.	John Redellec.
Bertram Leisseigue.	William Autret.
Julian Ruelland.	Claude Lorgi.
John le Bris.	John Gourmelon.
Dennis le Cors.	John Bernard.
John le Guyader.	Allen Crée, ran away at Conception, in Chili,
Peter Banniou.	March 14, 1786.
Joseph Richebecq.	John Mary Basset, discharged at Macao, in
Francis Mary Vautigny.	China, January 19, 1787.
Yves Hamon.	Peter Mary Fidèle Paugam.
John Hamon.	John Lewis Bellec.
Giles Henry.	Joseph le Blois.
Goulven Tarreau.	John Mary Letanaff.
William Duquesne.	Francis Feret.
Charles James Anthony Riou.	Mathurin Causiau.
Francis le Locat.	William Richard.
Yves Lewis Garandel.	Laurence Robin.
William Lambert Nicole.	Julian Massé.
John Monens.	John Thomas Andrieux.

Gunner's Crew.

Peter Guimard.	John Baptist Pliner.
Lewis David.	Coderant Lendeberet.
Joseph Fretch.	John Walter Plumeur.
Lewis Span, ran away at Conception, March	Juliens le Penn.
14, 1786.	Francis Bignon.
Christian Thomas.	Peter Rabier.

Supernumeraries.

Francis Querré	-	-	-	-	Coasting pilot.
John Guillou	-	-	-	-	Ship's surgeon.
John Mary Kermel	-	-	-	-	{ Steward, died September 7, 1787, in conse- quence of a gunshot wound.

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Peter Canevet	-	-	-	-	Cooper.
René Richard	-	-	-	-	Butcher.
Nicolas Boucher	-	-	-	-	Baker.
James le Rand	-	-	-	-	Armourer.
Francis Mary Omnes	-	-	-	-	Smith.
Francis Mordelle	-	-	-	-	Boy.

Servants.

Yves Riou	-	-	-	-	Discharged at Teneriffe, August 30, 1785
Simon George Deveau.					
John Geraud.					
John Sol	-	-	-	-	Died August 11, 1786.
John Lewis Droux	-	-	-	-	Discharged at Macao, February 1, 1787.
Francis Potorelle.					
Joseph Hereau.					

Additional.

Dupac de Bellegarde	-	-	-	-	Midshipman, made lieutenant of a man of war, August 4, 1786; turned over from the flute le Marechal de Castries; came on board at Macao, January 1, 1787.
Le Gobien	-	-	-	-	Midshipman, made lieutenant of a man of war, March 5, 1788; turned over from la Subtile; came on board at Manilla, April 8, 1787.
Peter Desluches	-	-	-	-	Marine.
Michael Stephen Philippe	-	-	-	-	Ditto.
Francis Marin	-	-	-	-	Ditto.
Six Chinese sailors	-	-	-	-	Entered at Macao.

PRIVATE INSTRUCTIONS

FROM THE KING TO THE SIEUR DE LA PÉROUSE,
CAPTAIN IN THE NAVY,

COMMANDING THE FRIGATES LA BOUSSOLE AND L'ASTROLABE.

JUNE 26, 1785.

HIS majesty, having ordered the frigates, la Boussole, commanded by the sieur de la Pérouse, and l'Astrolabe, commanded by the sieur de Langle, captains in his navy, to be equipped in the port of Brest for a voyage of discovery, makes known to the sieur de la Pérouse, whom he has appointed commander in chief of the two vessels, the service he will have to perform in the important expedition with which he is entrusted.

The different objects, which his majesty had in view, in giving orders for this voyage, require the present instructions to be divided into several parts, thereby to explain the more clearly to the sieur de la Pérouse his majesty's particular intentions, with respect to each of the objects he will have to pursue.

The first part will contain his route, or the plan of his voyage, in the order of the discoveries, which he will have to make or improve; and to this will be added a collection of geographical and historical notes, which may serve to guide him in his different researches.

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The second part will treat of subjects relating to politics and commerce.

The third will exhibit a detail of operations relative to astronomy, geography, navigation, physics, and the different branches of natural history, and will serve to regulate the labours of the different artists and men of science, employed in the expedition.

The fourth will contain directions for the conduct of the *sieur de la Pérouse* towards the savages, and the natives of the different countries he may have an opportunity of discovering or visiting.

The fifth will point out to him the precautions he ought to employ, to preserve the health of the ships' crews under his command.

PART THE FIRST.

PLAN OF THE VOYAGE.

THE *sieur de la Pérouse* will set sail from Brest road, as soon as his preparations are completed.

He will touch first at Funchal, in the island of Madeira, and afterwards at Port Praya, in that of St. Jago. He will provide himself with a few pipes of wine at the former place; and at the latter complete his stores of wood and water, and procure refreshments. He will be careful, however, to make his stay as short as possible at Port Praya, because he will arrive there at the season in which the climate is very unhealthy.

He will cross the line in 29° or 30° of longitude west from the meridian

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of Paris; and, if the wind permit, will endeavour to discover Pennedo de San Pedro (*note 2*), and ascertain it's situation.

He will reconnoitre the island of Trinidad (*notes 10, 11*), anchor there, take in wood and water, and fulfil during his stay one particular object of his instructions.

On quitting this island, he will get into the latitude of la Roche's Isle Grande (*note 19*), in 35° of west longitude; he will keep the parallels of 44° , 45° , till he arrive at the longitude of 50° , and he will then give up the search of this island, if he have not fallen in with it before he reaches this meridian. If he should think it more advisable to make the island from the west, he will confine his search to the meridians above-mentioned.

He will then steer for the latitude of la Roche's Land, called by Cook the Island of Georgia, in 54° south. He will make this island at it's north-westernmost point, and will particularly examine it's southern coast, which has not yet been explored.

Thence he will proceed to Sandwich Land (*note 21*), in 57° of south latitude. He will remember, that captain Cook was able to observe only a few points of the western coast of this land, and that it's extent to the east and south is unknown. He will particularly visit the eastern coast, run along the shore toward the south, and double the south point of the island, if the ice do not prove an insurmountable obstacle, at the time of his reaching it.

When he has satisfied himself of the extent of this land to the east and south, he will make for Staten Land, double Cape Horn, and come to an anchor in Christmas Sound, on the south-west coast of Terra del Fuego, where he may furnish himself with wood and water: but if he should find a westerly course too difficult, in consequence of the winds, which commonly blow from the west, and the currents, which sometimes set strongly to the east, he will make for the coast of Brasil, at as high a latitude as he

can, avail himself of the variable winds or land-breezes to run along the coast, and may touch at the Falkland Islands, which will afford him supplies of different kinds. He will then pass the strait of le Maire, or double the east coast of Staten Land, in order to fetch Christmas Sound, which, at all events, must be the first rendezvous of his majesty's ships, in case of a separation.

On quitting Christmas Sound, he will steer his course so as to cross the meridian of 85° west in the latitude of 57° south, and he will run down this parallel as far as the longitude of 95° , to search for Drake's Land, and Drake's Harbour (*note 23*).

He will then cross the meridian of 105° , in the parallel of 38° , which he will keep to the longitude of 115° , endeavouring to find out a land said to have been discovered by the Spaniards in 1714 (*note 25*), in the latitude of 38° , between the meridians of 108° and 110° .

After this search, he will make for the latitude of $27^{\circ} 5'$, in the meridian of 108° west, to proceed on this parallel in quest of Easter Island, situate in the longitude of $112^{\circ} 8'$. Here he will anchor, to fulfil the particular orders given him in the second part of these instructions.

From this island he will steer for the latitude of 32° , in the longitude of 120° west, and he will keep in this parallel to the longitude of 135° , in search of a land seen by the Spaniards in 1773 (*note 27*).

At this point of 135° longitude, and 32° latitude, the two frigates will separate. The one will get into the parallel between 16° and 17° , and will run it down from 135° to 150° west from the meridian of Paris, when she will make sail for the island of Otaheitee. The interval between the latitudes of 16° and 17° , for the space of 25° of longitude, having never been visited by any modern navigator, and all the neighbourhood of these parallels being interspersed with low islands, it is probable, that the vessel which follows this direction will fall in with new islands, which may be inhabited, as are most of the low islands of these seas.

In the mean time, the other frigate, departing from the same point of 32° latitude, and 135° longitude, will steer north to the latitude of $25^{\circ} 12'$, and endeavour to keep this parallel, from the meridian of 131° or 132° . She will there seek for Pitcairn's Island, discovered by Carteret in 1767, and situate in the latitude of $25^{\circ} 12'$. The longitude of this island is yet uncertain, because Carteret had it not in his power to determine it by observation: and it is extremely desirable, that it should be ascertained with precision; because, if the situation of this island were accurately known, it would serve to rectify that of the other islands or lands subsequently discovered by Carteret, from their relative positions.

On quitting Pitcairn's island, this frigate will steer her course first to the west, and then to the north-west, to search successively for the islands of Incarnation, St. John Baptist, St. Elmo, Los 4 Coronadas (four crowns), St. Michael, and the Conversion of St. Paul, discovered by Quiros in 1606 (*note 28*), which, it is supposed, must lie to the south-east of Otaheitee, and which have neither been sought after, nor descried, by the navigators of the present century. Thus this frigate will reach the meridian of 150° west, and the latitude of 19° , by a north-western course, whence she will steer for Otaheitee.

It may be presumed, that both vessels will have reached Otaheitee towards the end of April. This island will be the second rendezvous of his majesty's ships in case of separation. The two frigates will first come to an anchor in the bay of Oheitepeha, at the north-east point of that part of the island which is called Tiarraboo, or Otaheite-ete. This bay is to windward of that of Matavai, at the north cape, or Point Venus, into which they will put afterwards, that they may the more easily procure, in two different harbours, the refreshments of which they may stand in need.

After a month's stay the sieur de la Pérouse will set sail from Otaheitee. He may call, on his way, at the islands of Huaheine, Ulietea, Otaha, Bolabola, and other of the Society Islands, in order to procure additional supplies of provision, furnish those islands with European manufactures useful to

their inhabitants, and sow seeds, plant trees, pulse, &c. which may hereafter afford new resources to Europeans navigating these seas.

On quitting the Society Islands, he will steer his course north-west, to fetch the latitude of Quiros's Island of St. Bernardo (*note 28*), which is about 11° . He will pursue his search of this island only from 158° to 160° of longitude; and from the latitude of 11° he will steer north-west to the parallel of 5° , and the longitude of 166° or 167° . He will then shape his course to the south-west, crossing in this direction that part of the sea which lies to the north of the archipelago of the Friendly Islands, where it is probable, from the reports of the natives of these islands, he will fall in with a great number of others, never yet visited by Europeans, and not uninhabited. It is to be wished, that he may make Quiros's Island of the Handsome Nation, which he will seek for between the parallels of 11° and $11\frac{1}{2}^{\circ}$, from the longitude of 169° to 171° , and Bougainville's Navigators' Islands, whence he will steer for the Friendly Islands, to procure refreshments.

On quitting the Friendly Islands, he will get into the latitude of the Isle of Pines, lying off the south-east point of New Caledonia (*note 29*); when he has made it, he will coast along the western shore, which has never yet been visited; and he will satisfy himself, whether it be one single island only, or a cluster of several.

If, after having reconnoitred the south-west coast of New Caledonia, he can fetch Queen Charlotte's Islands, he will endeavour to make Mendana's Island of Santa Cruz (*note 30*), and ascertain its extent to the southward.

But if the wind will not allow him to make good this course, he will bear away for the Deliverance Islands, off the eastern point of the Land of the Arsacides, discovered by Surville in 1769 (*note 32*); he will run down their southern coast, which neither Surville nor any other navigator has explored; and he will satisfy himself, whether these lands do not form a group of islands, as is probable, which he will endeavour to particularise. It is to be presumed, that they are inhabited on the southern side, as they

are known to be on the northern ; and perhaps some refreshments may be procured there.

He will likewise endeavour to find an island to the north-west of the Land of the Arsacides, the eastern coast of which was perceived by Mr de Bougainville in 1768 ; but he will not spend more time in search of it, than he may judge will allow him afterwards to fetch, without difficulty, Cape Deliverance, at the south-east point of Louisiada (*note 33*) ; and he will endeavour, if he can, to examine the eastern coast of this land, before he arrives at the Cape.

He will proceed, from Cape Deliverance, to pass the Strait of Endeavour (*note 34*) ; and in this passage he will try to ascertain, whether the land of Louisiada be contiguous to that of New Guinea, and will reconnoitre all this part of the coast, from Cape Deliverance to the Island of St. Bartholomew, east-north-east of Cape Walsh, of which at present we have a very imperfect knowledge.

It is much to be wished, that he may be able to examine the Bay of Carpentaria (*note 35*) : but he must remember, that the north-west monsoon, to the south of the line, begins about the fifteenth of November ; and that the limits of this monsoon are not so precise, but that they may sometimes extend beyond the latitude of 10° south. It is of importance, therefore, that he should employ the utmost diligence in this part of his researches, and take care so to shape his course and employ his canvas, as to have passed the meridian of the south-west point of the island of Timor before the 20th of November.

If, contrary to all probability, he shall have found it impossible to procure refreshments, and supply himself with wood and water, in the places he will have visited subsequently to his departure from the Friendly Islands, from which it is supposed he will sail about the 15th of July, he will touch at Prince's Island, at the entrance of the Strait of Sunda, near the west point of the Isle of Java.

On leaving Prince's Island, or, if he have not been under the necessity of touching there, on quitting the channel of New Holland (*note 35*), he will shape his course so as to explore the western shore of this land, beginning his examination as near the equator as the winds will permit. He will run down the western coast, and take a closer view of the southern, the greater part of which has never been visited, finishing his survey at Van Diemen's Land, at Adventure Bay, or Prince Frederic Henry's: whence he will make sail for Cook's Strait, and anchor in Queen Charlotte's Sound, in that strait, between the two islands which constitute New Zealand. This harbour will form the third rendezvous of the frigates, in case of separation. Here he will repair his vessels, lay in wood and water, and furnish himself with refreshments.

It is presumed, that he will be ready to put to sea from this port, in the beginning of March, 1787.

On his departure from Cook's Strait, or from New Zealand, he will get into the parallel of 41° or 42° , and keep it as far as the longitude of 130° west. When he has reached this meridian, he will shape his course northwards, in order to get into the trade-winds, and into the latitude of the Marquesas Islands of Mendoza (*note 38*); and to get supplies for his vessels he will put into Mendaña's harbour of Madre de Dios, on the western coast of the island of Santa Christinia, called by Cook Resolution Bay. This will be the fourth rendezvous, if the vessels should separate.

This passage, it may be presumed, will not occupy more than two months; so that the vessels will be ready to sail about the 15th of May.

If, when he puts to sea from the Marquesas Islands, the wind should be sufficiently favourable to allow him to make good his course to the north, he may reconnoitre some of the islands to the east of the Sandwich Isles (*note 40*), which he will afterwards visit, and where he may enlarge his stock of provision, but will make no stay.

He will make without delay for the north-west coast of America; and for this purpose he will proceed to the latitude of 30° north, in order to get out of the trade winds, and fetch the coast in the latitude of $36^{\circ} 20'$, at Punta de Pinos, to the south of Port Monterey, which may be known by the mountains, or sierra, of Santa Lucia.

It is probable, that he may reach this coast about the 10th or 15th of July (*note 41*).

He will be particularly careful to examine those parts, which were not seen by captain Cook, and of which no idea can be formed from the accounts of the Russian and Spanish navigators. He will make a strict search in the parts not yet known, to see whether there be not some river, or some narrow gulph, forming a communication, by means of the interior lakes, with some parts of Hudson's bay.

He will pursue his search as far as Behring's Bay, and Mount Saint Elias; and will visit the harbours of Bucarelli and los Remedios, discovered by the Spaniards in 1775.

Prince William's Sound and Cook's River having been sufficiently examined, he will not waste his time in visiting them; but from mount Elias he will shape his course for the islands of Shumagin, near the peninsula of Alascha.

He will afterwards visit the archipelago of the Aleutian islands (*note 42*), and, in succession, the two clusters of islands to the west of them, the true situation and number of which are unknown, and which all together, with the coasts of Asia and America, form the grand northern basin or gulph.

When he has finished this examination, he will put into the port of Avatscha (*note 43*), or St. Peter and St. Paul, at the south-east extremity of the peninsula of Kamtschatka. He will endeavour to reach this harbour

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about the 15th or 20th of September: and this will form the fifth rendezvous in case of separation.

Here he will diligently supply the wants of his vessels, and take the necessary measures for being secure of finding provision there, when he shall return in 1788.

He will manage his affairs so as to be able to set sail from this port in the course of the first ten days of October.

He will coast along and explore all the Kuriles Islands (*note 44*); the north-east, east, and south coasts of Japan; and, as the season advances, according as he shall find the winds more or less favourable, and the seas more or less dangerous, he will extend his search to the islands on the east and south of Japan, to those of Lekeyo, and as far as Formosa.

When he has finished this examination, he will put in at Macao and Canton, or at Manilla, according to circumstances.

This port will be the sixth rendezvous, if a separation should take place.

It is to be presumed he will arrive here about the end of 1787.

In this port he will refit and revictual his ships, and will wait for the setting in of the south-west monsoon, which is commonly in the beginning of March. He may delay his departure, however, till the 1st of April, if his crews shall be in need of longer repose, and if, from the information he may have obtained, he shall deem a voyage towards the north too arduous before that period.

Whatever may be the duration of his stay, when he quits this port he will shape his course so as to pass the strait, which separates the island of Formosa from the coast of China, or between that island and those to the east of it.

He will visit with circumspection the western coast of Corea, and the gulph of Whang-Hay, without venturing too far, and taking care to have it in his power to double easily the south coast of Corea with the south-west or southerly winds.

He will then reconnoitre the eastern coast of this peninsula; that of Tartary, where there is a pearl fishery; and the opposite coast of Japan. All these coasts are completely unknown to Europeans.

He will pass the Strait of Tessoy, and visit the islands known by the name of Jeso (*note 45*), with that which the Dutch have called Staten Island, and the Russians Nadezda; of which we have hitherto but confused notions, from some ancient accounts which the Dutch East-India Company has suffered to transpire, but the fidelity of which has never been ascertained.

He will finish his examination of such of the Kuriles islands (*note 44*) as he was unable to visit in the preceding November, on his passage from Avatscha to Macao: he will sail out from between these islands as near as possible to the southern point of Kamtschatka: and he will come to an anchor in the port of Avatscha, the seventh rendezvous in case of separation.

Having refitted here, and taken in provision, he will put to sea again in the beginning of August.

He will get into the latitude of $37\frac{1}{2}^{\circ}$ north, in the meridian of 180° .

He will steer his course to the westward, in quest of an island or country said to have been discovered by the Spaniards in 1610 (*note 48*), and he will pursue his search to the longitude of 165° east. He will then proceed south-west, or south-south-west, to reconnoitre the scattered islands in that direction, to the east of the Ladrone or Marianne Islands.

He may touch at the island of Tinian ; but he will regulate his stay, and his subsequent course, by the north-east monsoon, which does not begin till October northward of the line, so as, that, on leaving the island of Tinian, he may run down and examine the new Carolinas (*note 49*), lying to the south-west of the Island of Guaham, one of the Ladrões, and to the east of Mindanao, one of the Philippines. He will pursue this examination as far as the Islands of Saint Andrew.

He will then touch at Mindanao, putting into the port situate on the southern coast, opposite the island of Sangir.

After a fortnight's stay here, employed in procuring refreshments, he will steer for the Molucca Islands, and may anchor at Ternate, for a supply of provision.

As the north-west monsoon, which then reigns to the southward of the line, will not allow a passage through the strait of Sunda, he will avail himself of the variation of the winds in the neighbourhood of the equator, to sail between Seram and Bouro, or between Bouro and Bouton (*note 50*), and he will endeavour to make his way out between some of the islands to the east or west of Timor (*note 51*).

It is probable, that, having now passed the parallel of 10° south, he may find himself beyond the limits of the north-west monsoon ; and may easily advance toward the west with easterly or south-easterly winds, so as to reach the Isle of France, which will be the eighth rendezvous of the ships.

He will stay at the Isle of France no longer than is absolutely necessary for putting himself into a proper condition to return to Europe ; and he will avail himself of the latter summer months for the passage he will have to make through the seas to the south of the Cape of Good Hope.

On leaving the Isle of France, he will get into the mean parallel between

54° and 55° south, to search for Cape Circumcision (*note 54*), discovered in 1739 by Lozier Bouvet.

He will fetch this latitude in the longitude of 15° east, and keep the parallel of 54° or 55° as far as the meridian of Paris.

When he reaches this point, he will pursue the search no farther.

If, at this period, he shall be of opinion, that his vessels are not sufficiently provided with water and provision for the passage to Europe, he will touch at the Cape of Good Hope, to enable them to continue their voyage; and this port shall be the ninth rendezvous, in case of separation.

Whichever part he may have taken, he will endeavour, in his return to Europe, to make the islands of Gough (*note 18*), Alvarez (*note 17*), Tristan d'Acunha (*note 16*), Saxemburg (*note 14*), and dos Picos (*note 10*); and, if he fall in with them, he will ascertain their situations, which are yet doubtful.

He will return to the port of Brest, where it is probable he may arrive in July, or August, 1789.

Though the route of the sieur de la Pérouse be traced in the present instructions, and the periods of his putting into port, with the stay he is to make, indicated, his majesty does not mean, that he should invariably adhere to this plan. All the calculations, of which a sketch is here given, must be governed by the circumstances of the voyage, the condition of the crews, ships, and provision, the events that may occur in the expedition, and accidents which it is impossible to foresee. These causes, singly or combined, may alter the plan of his operations, more or less; the object of the present instructions being solely to point out the discoveries that remain to be made or completed in the different parts of the globe, and the course it appears proper for him to pursue, in order to make his researches in due order, and suiting his different runs, and the periods of his stay, to the seasons, and to the

prevailing or periodical winds in different parts. His majesty, therefore, relying on the experience and judgment of the sieur de la Pérouse, authorises him to make any deviation that he may deem necessary, in unforeseen cases, pursuing, however, as far as possible, the plan traced out, and conforming to the directions given in the other parts of the present instructions.

PART THE SECOND.

SUBJECTS RELATING TO POLITICS AND COMMERCE.

IN the first part of these instructions, his majesty has traced out the path, which the sieur de la Pérouse will pursue, in the observations he has to make throughout the greater part of the terrestrial globe: and in this he will point out to him those objects of politics and commerce, which are particularly to engage his attention in the different places at which he stops, in order that the expedition undertaken by his majesty's command, while it contributes to the improvement of geography, and the extension of navigation, may equally accomplish, in other respects, the objects he has in view for the interest of his crown, and the benefit of his subjects.

1. The stay which the sieur de la Pérouse will make at Madeira and St. Jago will be too short for him to acquire an accurate knowledge of the state of the Portuguese colonies; but he will neglect no means of procuring information respecting the force kept there by the crown of Portugal, the trade carried on with the English and other nations, and all other important objects, of which it is for our advantage not to be ignorant.

2. He will learn whether the English have entirely quitted the Island of

Trinidad; whether the Portuguese have settled there; and what may be the establishment they have formed since it's evacuation.

3. If he should find la Roche's Isle Grande, he will examine whether it afford any safe and commodious harbour, where wood and water may be procured; what conveniences it offers for establishing a settlement there, supposing the whale-fishery should induce French merchant-ships to visit the southern part of the Atlantic; and whether there be any place, capable of being fortified with advantage, and maintained by a small force, a post, in short, suitable for a settlement so remote from the assistance and protection of the mother-country.

4. He will examine the Island of Georgia with the same views: but it is probable, that this island, situate in a higher latitude, will be found less convenient, than Isle Grande may be expected to be from it's situation; and that the ice, with which the sea in the neighbourhood of Georgia is encumbered, during one part of the year, will prove a great obstacle to general navigation, and prevent the fishers from making this island a place of rendezvous or retreat.

5. The islands of the great equatorial ocean can be supposed to furnish but few observations respecting politics and commerce. Their distance will probably prevent European nations from entertaining the design of forming settlements on them; Spain alone may be a little interested in occupying islands, which, being nearly equidistant from her Asiatic and American possessions, might afford harbours for the shelter and refreshment of her trading vessels crossing the great ocean. Be this as it may, the *sieur de la Pérouse* will chiefly study the climate and productions of the different islands in that ocean, at which he shall touch, the manners and customs of the natives, their religion, government, mode of making war, arms, and vessels, the distinguishing character of each tribe, what they may have in common with other savage nations and civilised people, and especially what is peculiar to each.

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In such of the islands as have been already visited by Europeans, he will endeavour to learn, whether the natives have distinguished the different nations of the navigators, and what opinion they may have formed of each in particular. He will examine into the use they have made of the different commodities, metals, tools, stuffs, and other things, with which they have been furnished by Europeans. He will inquire, whether the cattle, fowls, and other animals, which captain Cook left on some of the islands, have bred; what grain and pulse of Europe has succeeded best there; what methods the islanders have employed in cultivating them; and what use they have made of their produce. Lastly, he will every where examine the truth of the reports made by navigators, who have published accounts of these islands, and he will particularly endeavour to learn what may have escaped the observation of his predecessors.

During his stay at Easter Island, he will ascertain whether the population be decreasing, as there is reason to presume from the observations and opinion of captain Cook.

In passing the island of Huaheine, he will endeavour to find out Omai, the islander settled there by the English navigator in his third voyage: he will learn from him how he has been treated by his countrymen since the departure of the English, and what use he has made of the theoretical and practical knowledge he must have acquired during his stay in Europe, for the benefit, advantage, and improvement of his country.

6. If, during his visit to the islands of the great equatorial ocean, and the coasts of the continent, he should fall in with any vessel at sea belonging to another power, he will behave to the commander of the vessel with all the politeness and civility, that custom has established between polished and amicable nations: or if a similar meeting should take place in any port belonging to a people considered as savage, he will concert measures with the captain of the foreign vessel, for the certain prevention of all dispute or altercation between the crews of the two nations, who may happen to be on

shore together; and for lending each other mutual assistance, in case either should be attacked by the savages or islanders.

7. In his visit to New Caledonia, Queen Charlotte's Islands, the Land of the Arsacides, and Louisiada, he will carefully examine the productions of these countries, which, lying under the torrid zone, and in the same latitudes as Peru, may offer a new field of commercial speculation; and, without trusting to the reports, unquestionably exaggerated, which the ancient Spanish navigators have made of the richness and fertility of some of the islands which they discovered in that part of the world, he will only observe, that reasonings founded on geographical circumstances, and the knowledge acquired by modern voyages, give room to suppose, that the countries discovered on the one hand by Bougainville in 1768, and on the other by Surville in 1769, may be the same as were discovered by Mendaña in 1567, and since known by the name of Solomon's Islands, which was given them at a later period from the opinion, true or false, entertained of their wealth.

He will examine, with equal attention, the north and west coasts of New Holland; and particularly that part of the coast, which, being situate under the torrid zone, may enjoy some of the productions peculiar to countries in similar latitudes.

8. He will not have the same researches to make at the islands of New Zealand, of which a minute account is given in the narratives of the English navigators. But during his stay in Queen Charlotte's Sound, he will endeavour to gain intelligence, whether the English have formed, or entertained the project of forming, any settlement on these islands; and if he should hear, that they have actually formed a settlement, he will endeavour to repair thither, in order to learn himself the condition, strength, and object of the settlement.

9. If, while exploring the north-western coast of America, he should meet with any forts, or factories, belonging to his catholic majesty, he will carefully avoid every thing that may give umbrage to the commanders or

heads of these establishments; but he will avail himself of the ties of blood and friendship, by which the two sovereigns are so strictly united, to procure all the succour and refreshment of which he may stand in need, and which the country may be able to furnish.

It appears, that Spain has entertained the design of extending her claim of possession as far as Port de los Remedios, nearly in the latitude of $57\frac{1}{4}^{\circ}$; but nothing indicates her having formed a settlement there, when she ordered it to be visited in 1775, any more than at Port Bucarelli, situate about two degrees less to the north. As far as it is possible to judge from such accounts as have reached France, the actual possession of Spain does not extend beyond the harbours of San-Diego and Monterey, where she has erected small forts, garrisoned by detachments from California or New Mexico.

The sieur de la Pérouse will endeavour to learn the condition, strength, and object of these establishments; and to satisfy himself, whether they be the only ones formed by Spain on this coast. He will likewise inquire in what latitude furs may begin to be procured; what quantity the Americans can furnish; what commodities are best adapted for the trade; what conveniences may be found for making a settlement on this coast, if this new trade should offer the French merchant sufficient advantages, to induce him to engage in it, with the view of exporting the furs to China, which is said to be a ready market for them.

He will likewise endeavour to learn what kinds of furs may be procured there, and whether those of the otter, which are most valuable in Asia, where they are in great request, be the most common in America. He will take care to bring home to France samples of all the different furs he can procure: and as he will have occasion, in the course of his voyage, to stop at China, and perhaps to touch at Japan, he will inform himself what kind of fur has the most ready, certain, and profitable sale, in each of the two empires, and what advantage France may hope from this new branch of trade. Lastly, he will endeavour, during his stay on the coast of America,

to discover whether the Hudson's Bay settlements, the forts or factories in the interior part of the country, or any province of the United States, have opened any communication, any intercourse of trade and barter, with the people on the western coast, through the medium of wandering savages.

10. It is probable, that, on visiting the Aleutian Islands, and the other groups in the south of the great northern basin, he may meet with some Russian settlements or factories. He will endeavour to learn their regulations, strength, and object; how the Russians navigate these seas, what vessels, and what men they employ; how far they extend their commerce; whether there be any of these islands which acknowledge the sovereignty of Russia, or whether they be all independent; and lastly, whether the Russians have not extended themselves, step by step, as far as the continent of America.

He will avail himself of his stay in the port of Avatscha, to enlarge the knowledge he may have gained on these heads; and, at the same time, to procure, if possible, information respecting the Kurile Islands, Jeso, and the empire of Japan.

11. He will examine the Kurile Islands and Jeso with prudence and circumspection, both as to the navigation of a sea unknown to Europeans, and said to be stormy; and to the intercourse he may have with the natives, whose character and manners must have some resemblance to those of the Japanese, who may have subjected part of them, and have communication with the rest.

He will perceive, from the geographical and historical notes added to the present instructions, that the dominion of Russia extends only to a few of the Kurile Islands nearest to Kamtschatka; and he will examine, whether, among the more southern and independent, there be not some one, on which, in case a fur trade should be opened by France, it would be possible to form a settlement or factory, capable of being rendered secure from any insult on the part of the islanders.

VOYAGE ROUND THE WORLD.

12. With respect to Japan, he will endeavour to visit and examine the east and north-east coasts, and to land at some one of it's harbours, to satisfy himself, whether its government oppose insuperable obstacles to any establishment, to any intercourse of trade or barter with Europeans; and whether furs, which are objects both of luxury and use to the Japanese, would not tempt the ports on the east, or north-east, to admit vessels bringing such commodities, and to give teas, silks, and other productions of their soil, or articles of their manufacture, in exchange. Perhaps the prohibitory laws of that empire, which all accounts agree to be extremely severe, may not be observed so strictly on the north-east and eastern coast, as at Nangasaki and on the southern coast, places too near the capital to hope in this respect for any indulgence.

13. When the *sieur de la Pérouse* shall have reached Macao, he will take the necessary measures for obtaining permission to winter at Canton. For this purpose he will apply to the *sieur Vieillard*, his majesty's consul in China, and will direct him to take proper steps for succeeding with the Chinese government in this point. He will avail himself of his stay in this port, to acquire accurate and particular information of the present state of the trade carried on by European nations to Canton, and he will examine this important subject in every point of view, in which it can be interesting to obtain a knowledge of it.

He will get all the information, that can be of service to him in his subsequent navigation of the seas to the north of China, on the coasts of Corea, and eastern Tartary, and round all the countries or islands, which remain to be visited by him in those parts. He will not neglect to procure, if possible, a Chinese and Japanese interpreter, and, for his second call at Avatscha, a Russian interpreter: he will make an agreement with them for the time he shall keep them in his service, and, on his return, he will land them either at Mindanao, or at the Molucca Islands.

14. He must be aware, that the Japanese pirates are sometimes very numerous in the sea between Corea, Japan, and Tartary. The weakness of

their vessels, however, requires of him no other precaution, than that of being on his guard during the night, to avoid a surprise: but it would not be amiss, that he should endeavour to join one of them, and induce him, by means of presents and the promise of a reward, to pilot his majesty's vessels, on their visit to Jeso, part of which is believed to be subject to the Japanese, in their passage through the Strait of Tessoy, with which the Japanese must be acquainted, and in exploring such of the Kurile Islands as the Japanese are likely to frequent. This pilot may be equally useful to him for visiting some harbour on the western coast of Japan, provided circumstances did not permit him to touch at any port on the east, or north-east. But, whatever use the sieur de la Pérouse may make of such a pilot, he will not follow his advice and directions but with the utmost caution. It will be proper for him, likewise, to engage, if he can, some fishers of the Kurile Islands, to serve him as guides to those islands which border on Kamtschatka.

The sieur de la Pérouse will endeavour also, as he proceeds towards the north, to finish his examination of such islands as he was unable to visit on his passage from Avatscha to Macao; and to supply, on the western coast of Japan, what he could not execute on the east or north-east.

The examination of the coasts of Corea and Chinese Tartary must be conducted with great prudence and circumspection. The sieur de la Pérouse is aware, that the Chinese government is extremely jealous: consequently he will avoid hoisting his colours, and making himself known on these coasts; and will not venture upon any proceeding, which may excite uneasiness in the government, because it is to be feared, that it's effects would be felt by the French vessels coming to trade at Canton.

15. On visiting and exploring the Carolinas, which are scarcely known but by name to most of the nations of Europe, the sieur de la Pérouse will endeavour to learn, whether the Spaniards have formed any settlement on those islands, a design which they have often had in contemplation.

He will make himself acquainted with the productions of these islands,

and of all others that he may discover to the north-east and west-south-west of the Marianne or Ladrone Islands.

16. When he puts into Tinian, one of the Ladrões, he will obtain information respecting the settlements, forces, and trade of the Spaniards, in this archipelago and it's environs.

He will make the same inquiries at Mindanao, in order to learn, as accurately as he can, the political, military, and commercial state of that nation in the Philippine Islands.

17. During his stay at the Moluccas, he will not neglect to procure all the information he can respecting the situation and trade of the Dutch in these islands. He will particularly endeavour to learn, what advantages the trade of the English will gain from the liberty, which they have obtained by their late treaty of peace with the Dutch, to navigate and trade throughout all the Asiatic seas; what use the English have made of this liberty; and whether they have already succeeded in opening, by means of it, any new branch of commerce in this part of the world.

18. If the sieur de la Pérouse should touch at the Cape of Good Hope, he will get accurate information respecting the present state of that colony; the forces which Holland, or the Dutch East-India Company, has kept there since the peace; and the state of the new and old fortifications, which defend the city, and protect the road.

19. In all the islands, and harbours of the continent, occupied or frequented by Europeans, at which he shall touch, he will consider it as a general rule, to make with prudence, and as far as circumstances and the length of his stay will allow, every inquiry, that can enable him to ascertain, with some minuteness, the nature and extent of the trade of every nation, the naval and military force which they maintain there, the ties of friendship or interest which subsist between them and the chiefs or natives of the country where they have settlements, and every thing, in general, that concerns politics or commerce.

PART THE THIRD.

OPERATIONS RESPECTING ASTRONOMY, GEOGRAPHY, NAVIGATION, PHYSICS, AND THE DIFFERENT BRANCHES OF NATURAL HISTORY.

1. **H**IS majesty having appointed two astronomers, to be employed under the orders of the sieur de la Pérouse, in the expedition entrusted to his charge, and his two frigates being provided with all the instruments for the purposes of astronomy and navigation, of which they can make use either by sea or by land; he will take care, that neither neglects any opportunity, in the course of the voyage, of making every astronomical observation, which he may deem useful.

The most important object for the safety of navigation is, to determine with accuracy the latitudes and longitudes of the places at which he may touch, or in sight of which he may sail. With this view he will recommend to the astronomer employed on board each frigate to attend with the greatest exactness to the time-keepers, and to neglect no favourable opportunity of ascertaining on shore, whether they have kept the regularity of their going at sea, and of determining by observations any change that may take place in their mean rate, in order to take account of such change, for the purpose of fixing with more precision the longitude of the islands, capes, or other remarkable objects, which he may have descried and laid down in the interval between two verifications.

As often as the state of the heavens will permit, he will be careful, that the distance of the moon from the sun or stars be taken with the proper

instruments, to find out from it the longitude of the vessel, and compare it with that given by the time-keepers at the same instant, and for the same spot: and he will cause the observations, of every kind, to be repeated, in order that the greater precision may be obtained from the mean of different operations. When he passes in sight of any land or isle, at which he does not intend to touch, he will take care to keep himself as closely as possible on the parallel of the object, while the observation of the meridian altitude of the sun, or of some other star, is taking, to determine the latitude of the vessel; and he will keep in the meridian of the same object, during the observations by which its longitude is to be ascertained. Thus he will avoid every mistake of position and estimation of distance, which might diminish the accuracy of the determination.

Every day, when the weather will permit, he will cause the variation and dip of the magnetic needle to be observed.

On his arrival at any port, he will choose some convenient situation, for the erection of the tents and portable observatory with which he is furnished, and will set a guard over them.

Independently of the observations for determining latitudes and longitudes, for which he will cause every known practicable method to be employed, and of those for ascertaining the variation and dip of the needle, he will take care, that every celestial phenomenon, capable of being seen, be observed; and on all occasions he will procure the two astronomers every convenience and assistance, than can ensure the success of their operations.

His majesty is persuaded, that the superior and petty officers employed on board the two frigates will be eager of themselves, to make, in concert with the astronomers, every observation, that can be of advantage to navigation; and that the astronomers, on their parts, will be ready to impart to those officers the fruits of their study, and all the theoretical knowledge, that may contribute to the improvement of the nautical art.

The sieur de la Pérouse will direct a double register to be kept, on board each frigate, in which shall be entered daily, both at sea and on shore, the astronomical observations, those relating to the use of the time keepers, and all others. These observations will be entered simply in the register, that is to say, the number of degrees, minutes, &c. given by the instrument at the moment of observation, will be set down without any calculation, but merely noting the known error of the instrument employed, if such error have been ascertained by the usual proofs.

Each of the astronomers will keep one of these registers to himself, and the other will remain in the hands of the captains commanding the vessels.

The astronomer will likewise keep a second register, in which he will insert, daily, all the observations he may make, adding, to each operation, all the calculations, by means of which the result is to be deduced.

At the end of the voyage, the sieur de la Pérouse will cause the two registers kept by the astronomers to be delivered to him, after they have certified them to be the true ones, and signed them.

2. When the sieur de la Pérouse shall touch at any port, which it may be of importance to examine in a military view, he will direct the country to be reconnoitred by the engineer in chief, who will deliver to him a circumstantial report of all the remarks he shall have made, and such plans as he may be able to take.

The sieur de la Pérouse will cause accurate charts of all the coasts and islands he shall visit to be drawn; and, if they be already known, he will examine the accuracy of the descriptions and charts given by other navigators.

For this purpose, as he sails along coasts, and in sight of islands, he will cause their bearings to be accurately taken, by means of the reflecting circle, or the azimuth compass; and he will remember, that the bearings, which

may be employed with most security for the construction of charts, are those, in which the situation of one cape, or any other remarkable object, can be rectified by those of another.

He will employ the officers of the two frigates, and the geographical engineer, in carefully taking plans of the coasts, bays, harbours, and anchoring places, which he may have an opportunity of visiting and examining: and to every plan he will add instructions containing every thing that can be of use for distinguishing and approaching the land, sailing in and out of the harbours, the manner of coming to an anchor and mooring ship, and the best place for watering; the soundings, bottom, dangers, rocks, and shoals; the prevailing winds, sea and land breezes, monsoons, time of their duration, and periods of their change; in short, every nautical information, that can be of use to navigators.

Of all the plans of countries, coasts, and harbours, two copies will be made; one will be kept by each of the captains of the vessels; and at the termination of the voyage, the *sieur de la Pérouse* will cause all the charts, plans, and instructions relative to them, to be delivered to himself.

His majesty leaves it to the *sieur de la Pérouse* to determine the period at which he will cause the decked boats, put on board each frigate, to be set up: a business, however, which he will no doubt reserve for his stay at *Otaheitee*. These boats may be very usefully employed in the service of the frigates, either to visit the archipelagoes of the grand equatorial ocean; to explore minutely parts of the coast, and sound bays, harbours, and passages; or to facilitate every research, which requires a vessel drawing little water, and capable of carrying a few days' provision for it's crew.

3. The natural philosophers and naturalists, intended to make observations in their respective sciences during the course of the voyage, will be employed each in that branch of natural history or physics, to which his studies have been particularly turned.

Accordingly, the sieur de la Pérouse will point out to them the researches they will have to make, and will distribute to them the proper instruments.

In appointing their different occupations, he will take care to give to each a single subject, that his knowledge and zeal may thereby have their full effect in promoting the general success of the expedition.

He will communicate to them the paper drawn up by the academy of sciences, in which the academy points out the particular observations, to which it wishes the natural philosophers and naturalists to turn their attention during the voyage; and he will direct them to concur, each in his particular department, and as circumstances shall offer, in fulfilling the objects indicated in this paper.

In like manner he will communicate to the surgeon of each frigate the paper drawn up by the society of medicine, in order that both may employ themselves in such observations, as will tend to accomplish the wish of the society.

Throughout the course of the voyage, and during his stay in port, the sieur de la Pérouse will cause a journal to be kept on board each of the vessels, containing observations, from day to day, of every thing that relates to the state of the heavens and of the sea, the winds, currents, variations of the atmosphere, and whatever pertains to the science of meteorology.

During the stay he shall make in any harbour, he will observe the genius, character, manners, customs, bodily constitution, language, government, and number of the inhabitants.

He will cause the nature of the soil and the productions of the different countries to be examined, and every thing relating to the natural history of the globe.

He will direct natural curiosities, both of land and sea, to be collected;

to be arranged in order ; and a descriptive catalogue of each kind to be drawn up, in which shall be mentioned the places where they were found, the uses to which they are applied by the natives of the country, and, if they be plants, the virtues ascribed to them.

In like manner he will order the garments, arms, ornaments, utensils, tools, musical instruments, and every thing used by the different people he shall visit, to be collected and classed ; and each article to be ticketed, and marked with a number corresponding to that assigned it in the catalogue.

He will direct the draughtsmen embarked on board the frigates, to take views of all remarkable places and countries, portraits of the natives of different parts, their dresses, ceremonies, games, buildings, boats and vessels, and all the productions of the sea and land, in each of the three kingdoms of nature, if he shall think that drawings of them will render the descriptions more intelligible.

All the drawings made during the course of the voyage, all the boxes containing natural curiosities, together with the descriptions given of them, and all the collections of astronomical observations, shall be delivered to the *sieur de la Pérouse* at the end of it ; and no man of science, no artist, shall reserve for himself or others, any specimen of natural history, or other object, which the *sieur de la Pérouse* shall deem worthy to be included in the collection intended for his majesty.

4. Before he enters the port of Brest, at the termination of the voyage, or before arriving at the Cape of Good Hope, if he should deem it proper to put in there, the *sieur de la Pérouse* will demand all the journals kept on board the two frigates by the superior and petty officers, by the astronomers, men of science, and artists, by the pilots and all other persons, to be delivered into his hands. He will enjoin them, to observe the strictest silence respecting the object of the voyage, and the discoveries that may have been made, and for this he will require them to pledge their words. He will at the same time assure them, that their journals and papers shall be restored.

PART THE FOURTH.

OF THE CONDUCT TO BE OBSERVED TOWARDS THE NATIVES OF THE COUNTRIES WHERE THE TWO FRIGATES MAY LAND.

THE narratives of the several voyagers, who have preceded the sieur de la Pérouse, in the seas which he is to traverse, will have acquainted him before hand with the character and manners of some of the different people with whom he may have to deal, both in the islands of the great ocean, and on the north-western coast of America.

His majesty is persuaded, that, improved by this reading, he will strive to imitate the good conduct of some of these navigators, and avoid the faults of others.

At his arrival in each country, he will endeavour to conciliate the friendship of the principal chiefs, both by tokens of good-will and by presents, will inform himself what resources the place affords, to supply the wants of his vessels, and will employ all honourable means of forming connexions with the natives.

He will endeavour to learn what wares and commodities of Europe they prize the most highly, and he will make such an assortment of these as will be acceptable to them, and induce them to commence a traffic.

He will feel the necessity of taking every precaution, that prudence can suggest, for preserving his superiority over the multitude, without employ-

ing force ; and, however kind the reception he may meet from the savages, will consider it as of importance always to show himself in a state of defence ; because it is to be apprehended, that security on his part might tempt them to endeavour a surprise.

He will never send a long-boat, or any boat whatever, ashore, without it's being equipped with it's guns, and provided with musquets, cutlasses, pole-axes, and ammunition, in sufficient quantity, and commanded by an officer, whom he will order never to lose sight of the boat committed to his charge, and always to leave a party to guard it.

He will not permit any one of the officers or crew to sleep on shore, unless on duty ; and to those, who are obliged to remain on shore, he will give orders to retire, before night, to the tents erected for the purposes of an observatory and magazine. Here he will establish a corps-de-garde, at which an officer will always sleep, to maintain order among the sailors and marines appointed to this service, and to prevent, by his active and continual vigilance, any enterprise or attack from the savages.

He will take care so to moor his majesty's frigates that they may be able to protect the party on shore ; and he will regulate with the officer on guard the signals to be made in case of alarm.

These arrangements being observed, he will consider of the means of providing for the subsistence of his crews, and the other wants of his vessels ; and after he has made a selection from the tools, manufactures, and commodities of every kind, with which the frigates are furnished, he will form a store of them on shore, under the protection of the corps-de-garde : but, aware that the islanders of the great ocean in general have an irresistible propensity to thieving, he will take care, in order that he may not tempt them by the sight of too many things collected in one place, to send ashore such a quantity at a time only as may be employed in traffic in the course of the day.

He will regulate the value of the articles of exchange, and he will never allow the price fixed to be exceeded, lest, if he should grant in the beginning too high a price for the commodities he wishes to procure, the natives might take advantage of it not to part with them afterwards for less.

He will establish but one store for both frigates; and with a view to preserve order, and prevent abuses, he will direct one particular officer to treat with the savages, and he will appoint the petty officers or others, who shall do all the duty of the store under his orders. No officer, or other person, shall make any kind of exchange, under any pretence whatever, unless the *sieur de la Pérouse* shall expressly give him permission, and regulate the price.

If any one of the crew shall steal, for the purpose of carrying it ashore, any article belonging to the vessels, or any of the goods intended for barter, the *sieur de la Pérouse* will cause him to be punished according to the rigour of the articles of war; and he will punish still more severely those, who, being employed in the duty of the store, shall abuse his confidence, and purloin articles for a fraudulent traffic.

He will enjoin every one of the crew to live amicably with the natives, to endeavour to conciliate their friendship by civility and good behaviour, and he will forbid them, under pain of the severest punishment, ever to employ force to procure from the inhabitants what they may refuse to part with voluntarily.

On all occasions the *sieur de la Pérouse* will behave with great gentleness and humanity to the different people he may visit in the course of his voyage.

He will zealously exert himself in every thing that can improve their condition, by bestowing on their country the pulse, fruits, and useful trees of Europe; by teaching them the manner of sowing and cultivating them; and by enabling them to understand the use they are to make of these

presents, the object of which is to multiply on their soil productions necessary to a people who derive almost the whole of their subsistence from the earth.

If imperious circumstances, for which, in a long expedition, it is the part of prudence to be provided, should ever compel the sieur de la Pérouse to employ the superiority of his arms over those of savage nations, in order to procure himself, in spite of their opposition, the necessaries of life, such as provision, wood, and water, he will use his strength with the greatest moderation, and punish with extreme severity any of his people who shall exceed his orders. In all other cases, if he cannot obtain the friendship of the savages by good treatment, he will endeavour to keep them in awe by threats; but he will have recourse to arms only in the last extremity, for his own defence alone, and on occasions when forbearance would decidedly endanger the safety of the vessels, and the lives of the French subjects, with whose preservation he is entrusted: and his majesty will consider it as one of the happiest events of the expedition, if it should terminate without costing the life of a single individual.

PART THE FIFTH.

PRECAUTIONS TO BE TAKEN FOR PRESERVING THE HEALTH OF THE CREWS.

AS the sieur de la Pérouse is acquainted with his majesty's intentions respecting the conduct he is to pursue towards savage nations, and the care his majesty has taken, that the visit of the French, far from being a misfortune to these people, should on the contrary confer on them advantages of which

they are destitute; he will unquestionably feel, what particular attention he ought to pay to the preservation of the crews employed in the expedition, which his majesty has entrusted to his command.

The ships under his orders are abundantly provided with every article, which can serve to prevent or cure the diseases to which seamen are liable; and also with such as are intended to supply the place of the ordinary kinds of provision, and correct their bad effects. He will take great care, that these different articles are used on proper occasions, and with moderation; and he will neglect no opportunity, that may occur in his different stoppages, of procuring for his crews such refreshments and wholesome food, as may counteract the effects of the long use they will be obliged to make of salt provision.

Upon the article of stowing the provision in the hold, his majesty relies on the prudence of the *sieur de la Pérouse* for directing such an arrangement, as he shall think most proper to be observed on board the two frigates.

While he is in port, he will take care to have the provision examined, and such parts to be aired, as may exhibit symptoms of decay, the progress of which may be checked by this process.

He will neglect no opportunity of procuring fresh fish for his crew, and of recruiting his stock of salt provision, by the means with which he has been furnished, and by adopting the methods successfully employed by modern circumnavigators.

The *sieur de la Pérouse* is not ignorant, that one of the precautions most efficaciously contributing to preserve the health of seamen, is a constant attention to extreme cleanliness in the ships, and in their persons. For this purpose he will have recourse to every known method, such as ventilators, fumigations, perfumes, to renew and purify the air in the hold and between decks. Every day, when it can be done, he will order the hammocks and clothing of the crews to be exposed to the open air; and that

the sailors and others, who compose them, may not be negligent of personal cleanliness, he will divide them into companies, the inspection and superintendence of which shall be shared among the officers of each frigate.

Each of these shall give an account, weekly, to the captain, of the condition of the clothing and the wants of the company of which he has the charge: and the spare clothing, which his majesty has directed to be put on board, shall be distributed to the crews of the two ships, by order of the sieur de la Pérouse, according to the arrangement made by the commander, and on occasions when he shall deem such a supply necessary.

The sieur de la Pérouse will maintain the strictest discipline among the crews of the two frigates, and exert himself carefully to prevent the smallest laxity in this respect: but this rigour, proper in every service, and indispensable in an expedition of several years, will be tempered by the constant operation of that paternal care, which he owes to the companions of his toils: and his majesty, knowing the sentiments with which he is animated, is confident, that he will be ever studious to procure for his crews every convenience and every indulgence, which, without injury to the service, and to the object of the expedition, can be bestowed upon them.

His majesty cannot give to the sieur de la Pérouse a more distinguished mark of the confidence he has in his zeal, capacity, and prudence, than by entrusting him with one of the most extensive enterprizes ever undertaken. Some of the navigators, who have preceded him in the career of discovery, have left him important lessons, and great examples: but his majesty is persuaded, that, equally ambitious of fame, equally zealous for the promotion of knowledge, and equally persevering with those whom he will take as his models, he will himself deserve hereafter to be held up as a pattern to others, who, prompted by the same courage, shall aspire after the same celebrity.

N O T E.

In drawing up a plan for the voyage of discovery, the conducting of which is entrusted to M^r de la Pérouse, it was intended, that he should pursue, in the different seas, tracks not before taken by any of the navigators who have preceded him; this appearing to be the most certain way of augmenting the number of discoveries, and of best advancing, in this voyage, the grand work of a complete description of the terrestrial globe.

It was necessary, however, to point out as resting places such islands as are already known, and where we are assured M^r de la Pérouse can procure provision by means of barter; for which purpose he has been furnished with a quantity of goods of every kind, of which an assortment has been made up, adapted to the tastes of the different islanders with whom he will have to traffic. But, in pointing out to the French commander such places of rest, care has been taken, that he should arrive at them by unfrequented routes, and that, among the commodities with which he is provided, there should be several as yet unknown in the islands at which he may land, that the natives may readily perceive the people who bring them to belong to a new nation, by whom they have never been visited.

Different methods of calculation have been employed for estimating the length of his different passages. In the ordinary tracks, and open seas, it has been supposed, that a vessel could make, with the trade-winds, thirty leagues in twenty-four hours: twenty-five leagues only however have been allowed, for the same space of time, in those latitudes, where prudence will require him to lie-to during part of the night; and twenty leagues only, when the vessels are engaged in discovery; and in this case a certain number of days have always been added, as a compensation for the time lost in visiting and examining a coast.

The total duration of the voyage must necessarily exceed four years, since in a less space it would be impossible to accomplish all the objects

which his majesty has proposed. The periodical returns of the different monsoons at the same time, on the north and on the south of the line, are data by which the route must necessarily be guided, and which interfere extremely with navigation in the seas near the archipelagoes and the continent of Asia, as they will allow the different latitudes to be visited only at the periods when the winds are favourable. This consideration of the monsoons has required various arrangements, to adjust the route to them, without adding greatly to the total duration of the expedition; and in such a manner, that no portion of the voyage, from one place to another, should exceed the limits that ought to be prescribed, with regard to the quantity of wood and water, that each vessel can take on board in proportion to her crew. At the same time, his majesty's ships are provided with stores of every kind more than sufficient for a four years' voyage, taking into the account the casual resources, which the narratives of modern navigators have pointed out, and which the foresight and activity of M^r de la Pérouse will procure at his different resting places. The last voyage of captain Cook occupied four years, two months, and twenty-two days: yet his vessels were not so well provided as those of his majesty will be in the present instance.

If, as there is reason to expect from the zeal and ability of the commander of the expedition, every object pointed out in his instructions should be accomplished, the voyage of M^r de la Pérouse will leave nothing for future navigators, who shall attempt discoveries, but the merit of giving us more circumstantial and minute accounts of certain portions of the globe.

The method pursued in the construction of the hydrographical charts, which are to be put into the hands of the commanding officers of the vessels when approved by his majesty, remains to be made known.

In the first place, a chart of the Southern Ocean has been constructed, on which are traced, from the journals themselves of the different navigators, the routes which led them to discoveries; and such as remain to be made, or verified, are pointed out. This chart has been taken from the best French,

Spanish, English, and Dutch charts ; and has been corrected by the positions of the principal points of the continents and islands, which have been determined by astronomical observations.

The extent of the Great Ocean, commonly called the Pacific Ocean, or South Sea, required it to be divided into three bands or zones, the first of which contains the Great Southern Ocean, or the space included between the antarctic circle and the tropic of Capricorn ; the second, the Great Equatorial Ocean, or the interval between the two tropics ; and the third, the Great Northern Ocean, or the sea between the tropic of Cancer and the arctic circle.

As the course of M^r de la Pérouse will not carry him beyond the latitude of 60°, north or south, it has been deemed useless, to trace the Great Northern Polar Ocean, or the Great Southern Polar Ocean, on the chart constructed for his voyage.

For the execution of the chart of the Great Ocean, the journals of all the navigators of the present century, and of preceding ages, who have explored those seas, have been examined. The plans they have given in detail have been consulted, and incorporated, on a reduced scale, into the general chart, and all the routes that are known of ancient and modern navigators been traced on it, for the purpose of comparing recent discoveries with those made in former ages, and of proving, in some instances, their identity.

This general chart of the Great Ocean is the result of all that has been done by navigators and geographers to the present day. A circumstantial account of the various materials that have been employed, will not be attempted here ; for a bare enumeration of them would require a volume. We shall content ourselves with merely subjoining to his majesty's instructions a few geographical and historical notes on certain parts, respecting which a more minute detail is requisite ; while to the two general charts of the Southern Ocean, and of the Great Ocean, will be added a collection of thirty-seven other charts, or original manuscript plans, of the least frequented parts of these seas.

EXTRACT

FROM THE GENERAL INSTRUCTIONS OF M^r DE LA
PÉROUSE.

JUNE 26, 1785.

HIS majesty authorises the sieur de la Pérouse to bestow on the crews certain months' pay by way of reward, the quotas of which he will regulate according to circumstances. He will only take care, that the whole of such rewards, bestowed by him in the course of his voyage, do not amount to more than a year's pay to each crew. Beside these rewards, which he will announce to the inferior officers, sailors, and marines, on occasion of their meriting them, he will make known to both the crews, that it is his majesty's intention, that the pay of such as shall die on the expedition, reckoning from the day of their decease, shall form a fund, to be divided among the rest of the crew of the ship to which they belonged; and that all the pay due to them, at the time of their decease, as well as the value of their clothes, if disposed of, shall be accounted for to their families.

NOTES GEOGRAPHICAL AND HISTORICAL,

TO BE SUBJOINED TO THE KING'S PRIVATE INSTRUCTIONS
TO M^r DE LA PÉROUSE.

SOUTHERN OCEAN.

Note 1. **T**HE three *Vigies*, or *sunken rocks*, lying on the south-south-west of the island of St. Jago, one of the Cape Verde islands, as well as the French *Vigie* and the breakers seen by le César in 1730, off the south-south-east of the same island, are laid down from the English chart of the Atlantic Ocean, published at London in 1777, in four sheets*.

2. *Pennedo de S. Pedro*. It's latitude, $0^{\circ} 55'$ north, is agreeable to what M^r Daprès says he found it by observation, on board le Rouillé, in 1750. See the Instructions to the *Neptune oriental* of M^r Daprès, p. 189.

He makes it's longitude 29° west of Paris; deducing it from the difference of meridian observed between the Island of Ascension and Pennedo, which he fixes at $12^{\circ} 40'$.

But M^r Daprès reckoned, from an observation made in 1754 by the abbé de la Caille, that the longitude of Ascension was $16^{\circ} 19'$ west: but as

* All that part of this map, which is included between 14° and 47° of north latitude, is a copy and translation of that which was constructed and published by Fleurieu, and added to his *Voyage à différentes Parties du Monde*, &c. "Voyage to different Parts of the World," Paris, printed at the royal press, 1773, 2 Vols. 4to. French Editor.

it's longitude, corrected and determined by the observations of captain Cook, second Voyage, Vol. II. p. 276, is $16^{\circ} 54'$, it follows, that, admitting the difference of meridian between Pennedo de S. Pedro and the Island of Ascension as given by M^r Daprès, the longitude of Pennedo must be $29^{\circ} 34'$ west of Paris; and this is adopted in the chart delivered to M^r de la Pérouse.

A description of Pennedo will be found in the Instructions to the *Neptune oriental* of M^r Daprès, p. 189:

3. The *sboals* in the neighbourhood of the line are laid down according to the *Neptune oriental*, p. 9.

4. The little island of *Sable*, or *St. Paul's*, which was seen in the same parallel in 1761, by the ship *le Vaillant*, commanded by M^r Bouvet, is placed conformably to the Sailing Directions for the East-Indies, London, 1781, p. 7. This situation agrees in latitude with that given on the general chart joined to the account of captain Cook's third voyage, $0^{\circ} 25'$ south; but it differs $35'$ in longitude.

It's longitude west of Paris would be $21^{\circ} 25'$ according to the Sailing Directions, where it is given from the journal of M^r Bouvet; but it is placed in $20^{\circ} 45'$, to make it agree with the correction of Pennedo. See note 2.

5. *Island of Fernando de Noronha*. This is placed conformably to the latitude and longitude determined by captain Cook. Latitude $3^{\circ} 53'$ south, longitude $34^{\circ} 53' 50''$ west of Paris. See his second Voyage, Vol. II. p. 278 and 279.

The distance between this island and the nearest part of the coast of Brasil being ascertained to be between sixty and seventy leagues, according to the journals of the Portuguese, and the Spanish chart of South America, published by la Cruz Cano y Olmedilla, in eight sheets, in 1775, the longitude of the coast of Brasil may be considered as settled; and it has been

adjusted to that of the Island of Noronha, by making it's difference of meridian $2^{\circ} 40'$ west.

6. The *Island of St. Matthew* was seen in 1525 by Garcia de Loaes or Loaysa, a Portuguese captain ; but it had been discovered eighty-seven years before that period. (*Tratado dos Descubrimentos de Galvano, &c.* "Account of Galvano's Discoveries," Lisbon, 1731, p. 66.) It has been placed according to the general chart of Cook's third Voyage. It's situation is uncertain, and this celebrated navigator regrets, that he had no opportunity of determining it. See his second Voyage, Vol. II. p. 276.

7. The latitudes and longitudes of the *Island of Fernando Po*, *Prince's Island*, *St. Thomas*, and *Annobon*, have been ascertained by observations made in 1779 by Don Varella, an officer in the Spanish navy: viz.

The Island of Fernando Po, road of St. Charles	{ Latitude $3^{\circ} 28'$ north. Longitude $6^{\circ} 30'$ west of Paris.
Prince's Island, the harbour	{ Latitude $1^{\circ} 39'$ north. Longitude $5^{\circ} 2'$ west.
Island of St. Thomas, the harbour	{ Latitude $0^{\circ} 20'$ north. Longitude $4^{\circ} 34'$ west.
Island of Annobon, on the north coast	{ Latitude $1^{\circ} 25'$ south. Longitude $3^{\circ} 25'$ west.

From these longitudes, and those of Cape Verde, Sierra Leona, the Isles of Los, and the Cape of Good Hope, where observations have been likewise made, the situations of the different points of the western coast of Africa have been adjusted.

8. The *Island of Ascension* is laid down conformably to the observations of captain Cook.

Middle of the island	{ Latitude $8^{\circ} 0'$ south. Longitude $16^{\circ} 50'$ west of Paris.
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Cook's second Voyage, Vol. II. p. 276.

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According to the abbé de la Caille, the latitude would be only $7^{\circ} 57'$; and the longitude, deduced from an emersion of the first satellite of Jupiter, $16^{\circ} 17'$: see *Mémoires de l'Académie des Sciences*, "Memoirs of the Academy of Sciences," for 1754, p. 129: but it has been deemed advisable to follow Cook, whose decisions are the result of a great number of observations. A minute description of this island may be found in Cook's second Voyage, as quoted above.

9. The *Island of St. Helena*, too, is laid down from the observations of Cook, and those of Halley.

At Fort James { Latitude $16^{\circ} 0'$ south, according to Halley.
 { Longitude $8^{\circ} 11'$ west of Paris, according to Cook.
 Cook's second Voyage, Vol. II. p. 270.

According to Mr Maskelyne, astronomer royal at Greenwich, the latitude of the Island of St. Helena is $15^{\circ} 55'$; and its longitude, calculated from an observation made by him of the first satellite of Jupiter, would be $8^{\circ} 9'$. British Mariner's Guide, 1763, 4to.

10. *Island of Trinidad*. This island is laid down by its distance from Cape Frio, on the coast of Brasil, as given by Mr Daprès, in the *Neptune oriental*, p. 10, from which are deduced:

The northern coast { Latitude $20^{\circ} 25'$ south.
 { Longitude $32^{\circ} 15'$ west of Paris.

The *Island dos Picos* is placed conformably to the Dutch charts, rectifying its position by that of Trinidad.

11. *Islands of Martin Vas*. These are three rocks, bearing from each other north and south, except that the northernmost lies a little more to the west. They do not occupy above the space of a mile. Extract from the original journal of Halley, printed in a Collection of Voyages in the Atlantic Southern Ocean, by A. Dalrymple; London, 1775, 4to. p. 53.

In the Journal of Mr Lozier-Bouvet, printed in French, *ibid.* p. 7. of the Journal, it is said, that the islets of Martin Vas lie eight leagues north by east from the island of Trinidad. Their latitude is the same as that of this island.

12. The *Island of Ascencion*, on the coast of Brasil, is placed after the notes of Mr Daprès, p. 9 of the Instructions to the *Neptune oriental*:

Latitude - - - 20° 25' south.

Longitude - - - 38° 0' west of Paris.

This situation implies, that it's distance from Cape Frio is a hundred and twenty leagues, as Mr Daprès observes, *ibid.* p. 9.

13. *Rock*, discovered in 1692, and *Vigie*, sunken rock, in 1701. These dangers are laid down from Mr. Dalrymple's chart of the southern ocean, placed at the end of the work quoted in note 11.

14. *Island of Saxenburg*. This island was discovered in 1670 by John Lindestz Lindeman, a Hollander, in the latitude of 30° 45' south, and about 22° of longitude west from Paris; taking into the account the situation of the other islands in the same parallel, to which navigators have referred it by distances and bearings taken by estimation. See *les Navigations aux Terres Australes*, "Voyages to the South," by the president Desbrosses, Vol. II. p. 48.

15. *Kattendyke* is placed after Dalrymple's chart, belonging to the work quoted in note 11, and the general chart of Cook's third Voyage.

16. *Islands of Tristan da Cunha*. The position of these has been regulated by the Instructions of Mr Daprès, *Neptune oriental*, p. 10, who fixes the latitude of these islands between 37° 10' and 37° 45' south, and their longitude at 16° 30' or 17° west of Paris, from a mean of the different tracks of several vessels, indicating 34° for the difference of meridian between these islands and the Cape of Good Hope, which is 16° 3' 45" west of Paris.

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Mr Halley says, in his Journal, that he ascertained the most southern latitude of these islands to be $37^{\circ} 25'$. See p. 41 of his Journal in Dalrymple's work, quoted note 11.

A tolerably minute account of these islands is to be found in the Instructions to the *Neptune oriental* of Mr Daprès, p. 10.

Beside the anchorage on the north of the principal of the Islands of Tristan da Cunha, noted on the chart delivered to Mr de la Pérouse, we are acquainted with a kind of port or haven, to the east of the southern point, on the authority of a credible navigator, from whom we have the following particulars. This port is not observable on coasting along the shore, because it is concealed by large reeds, which, being beaten down, and lying on the surface of the water, cross each other when certain winds blow, and completely conceal the entrance of the harbour. It may be about half a mile wide, and three quarters of a mile in length: its figure is nearly that of a horse-shoe. In the middle of the channel there are twenty-eight fathoms of water, and near the sides fourteen: about the middle of the harbour the depth is also fourteen fathoms, and ten towards the head: the bottom is black sand, and good holding ground.

It is to be observed, that the southernmost point, which is on the south-west of the island, is terminated by some low rocks, stretching out about a quarter of a mile into the offing. They are not laid down on the chart given to Mr de la Pérouse, because it is a faithful copy from the only plan we know of these islands, on which the rocks in question were not noticed.

17. *Island of Diego d'Alvarez.* This is set down from the general chart of Cook's third Voyage, and corrected by the Islands of Tristan da Cunha, preserving the distance and bearings from these islands given in that chart.

Latitude	-	-	$38^{\circ} 53'$ south.
Longitude	-	-	$13^{\circ} 0'$ west from Paris.

18. *Gough's Island*, so called from a captain in the service of the English East-India company, who discovered it in 1715. We read in the New Directory for the East Indies, by W. Herbert, W. Nicholson, and others, 5th edition, 1780, p. 371 and 372, that Gough's Island is a high land, situate in $40^{\circ} 15'$ of south latitude, and $1^{\circ} 57'$ west of Greenwich, or $4^{\circ} 17'$ west of Paris. Captain Vincent, commanding the ship *Osterley* in the service of the same company, likewise saw Gough's Island, in 1758, in the latitude given by the discoverer; but he calculates, from his reckoning, that, by placing it in the longitude of $1^{\circ} 57'$ west of Greenwich, it is carried some degrees too far to the east.

This island is unknown to French navigators: but, as vessels desirous of proceeding directly to India or China, in the spring season, without touching at the Cape of Good Hope, would keep in high latitudes, to bear away afterwards for the Islands of St. Paul and Amsterdam, and may thus fall in with it, the determination of its true place cannot be uninteresting, and it is to be wished, that M^r de la Pérouse, who has the means of doing this, may not want the opportunity.

19. *Isle Grande of la Roche*. This we can only lay down by guess, from the following account, extracted and translated from a Spanish work, entitled *Descripcion geographica, y derrotero de la Region Austral Magallanica, &c.* "A Geographical and Nautical Description of the Southern Magellanic Regions," &c. by Captain Don Francisco de Seixas y Lovera. Madrid, 1690; 4to. p. 29.

"In the month of May, 1675, Anthony de la Roche, of French extraction*, but then in the English service, returning from the island of Chiloe, on the coast of Chili, having doubled Cape Horn, and desirous of re-entering the Southern Atlantic Ocean by the Strait of Le Maire (it was not then known, that the sea was open to the east of Staten Land), found

* It is surely by mistake, that captain Cook, in the General Introduction to his second Voyage, p. xv. in speaking of Anthony la Roche, calls him an English merchant.

the westerly winds so strong, and the currents setting to the east so rapid, that it was impossible for him to approach the land forming the Strait of Magellan. The month of May was already far advanced; winter was commencing in that climate; and la Roche began to despair of making his passage. His uneasiness increased, when he descried an unknown land ahead of him *. He made every effort to approach and examine it; and at length he gained a bay, in which he anchored near a cape or head-land stretching south-east. Here he had twenty-eight, thirty, and forty fathoms of water, with a rocky and sandy bottom. He observed inland, not far from the shore, some hills covered with snow; was exposed to very boisterous winds; and remained here fourteen days. The weather at last cleared up; he then discovered, that he had anchored at one of the extremities of the land; and he perceived, to the south-east and the south, other high lands covered with snow. A light breeze from the south-east allowed him to get under weigh; and, on making sail, he had the coast of the said island on the west †, and the southern lands remained to the south and south-east of him. It appeared to him, that the channel between the island and the main was about ten leagues over: the currents carried him with great rapidity to the north-east: and, by steering east-north-east, he found himself, in an hour and an half, clear of the passage, which he says is very short, because the new island, which, with the land to the south-east, forms the channel, is very small.

“ On quitting this island, he steered north-west for twenty-four hours, when a violent gale of wind coming on from the south obliged him to run due north for three days, till he came into the latitude of 46° . The storm abating, la Roche, thinking himself out of danger, directed his course for the Bay of All-Saints, when, in the latitude of 45° , he fell in with an island, which he said was very large, pleasant to the eye, and possessed of a good

* This land, as will appear in note 20 following, is that which Mr. Ducloux Guyot saw in 1756, and which captain Cook, who visited the north-eastern coast in January 1775, has named the Island of Georgia.

† This implies, though it is not mentioned in the narrative, that he had anchored off a point of land having an island to the west, or north-west.

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harbour to the eastward, in which he found wood, water, and fish; but he saw not a single inhabitant during the six days he staid.

“ From this port he sailed to the Bay of All Saints.”

The place of Isle Grande has been regulated by the situation of the first land la Roche discovered to the east of Staten Island, which has been rediscovered in modern days, and is the Island of Georgia of Cook. In consequence, the southern coast of Isle Grande has been laid down in latitude 45° , according to the information of La Roche, and about thirty leagues more westward than the first land he discovered; because, as we have seen, on leaving this land he steered north-west four-and-twenty hours; because it is probable, that the southerly gale he experienced partook a little of the south-east, which had previously prevailed; and lastly, because, from the termination of the gale to the time of his discovering Isle Grande, he had constantly sailed north, which was his course, in quest of the Bay of All Saints.

There is every reason to believe, that the Isle Grande of la Roche is the same land as Americus Vesputius discovered in his third voyage, in 1502. The geographers of the last two centuries have assigned different situations for this land of Vesputius, because they were unacquainted with the original journal of this ancient navigator; and, as it has not been found again since the period of its discovery, modern geographers have expunged it from their maps. However, on consulting the original letters of Americus Vesputius, in which he gives an account of his voyages*, it appears not impossible, to ascertain pretty nearly the situation of the land he discovered in 1502. He says, in the journal of his third voyage, p. 54. of his Letters, that, having taken his departure from a port on the coast of Brasil, situate in 32° of south latitude [perhaps this was the port called St Pedro], he sailed south-east as far as the latitude of 52° , where he perceived neither the stars

* *Vita e Lettere di Amerigo Vesputi, &c.* “The Life and Letters of Americus Vesputius,” collected and illustrated by Ab. Angelo Maria Bandini. Florence, 1745; 1 Vol. 4to.

See also *Novus Orbis*, “The New World.” Basil, 1555; fol. p. 226 and following.

of the Little Bear, nor those of the Greater. It is to be observed, that Americus Vesputius, when speaking of his course, pays no regard to the variation of the compass, which, at the time of his voyage, must have been 19° or 20° east in those latitudes; and accordingly, the course, which he calls south-east, must be considered as nearly equivalent to south-south-east. Now, if we take our departure from the coast of Brasil in the latitude of 32° , to cut the parallel of 52° by a south-south-east course, the point of section will be found about 44° west of Paris; which is a little to the west of what may be supposed the meridian of Isle Grande, and about a hundred and forty leagues south, a little west of this island. In this situation, on the 3d of April, Vesputius met with a gale of wind from the south-west, which obliged him to scud under bare poles till the 7th; when he fell in with a new land, along which he coasted for twenty leagues, and which appeared to him to be difficult of access, without a harbour, and without inhabitants. Now a seaman will allow, that Vesputius may be fairly supposed, during the four days he was driving to the north by a violent gale at south-west, to have made five-and-thirty leagues in four-and-twenty hours, though under bare poles; and consequently, setting out from 52° , to have reached the latitude of 45° . To give the greater weight to this opinion, it may be observed, that Vesputius, on quitting this newly discovered land, reckoned himself thirteen hundred leagues from the coast of Ethiopia [Sierra Leona], which he reached the 10th of May following; and to arrive at which he directed his course constantly between the north and north-east. Now Sierra Leona lies north-north-east, two or three degrees east, from Isle Grande, according to the position assigned it in the chart given to M^r de la Pérouse, and twelve or thirteen hundred leagues distant. Beside, we are acquainted with no island, at this distance from the coast of Ethiopia, and bearing from it south-south-west, that presents an uninterrupted line of coast for twenty leagues: and as the veracity of Vesputius concerning a fact of this kind cannot be questioned, his testimony may be considered as an ancient proof of the existence of Isle Grande, confirmed by the more recent report of Anthony de la Roche.

20. *Land or Island of la Roche, named by Cook the Island of Georgia.*

The preceding note has related the time and circumstances of the discovery of this island by Anthony de la Roche; but the account preserved by Seixas does not indicate the latitude. We know only, that, to arrive at Isle Grande, which la Roche fell in with in the latitude of 45° , he had sailed from this island north-west twenty-four hours, and that a strong gale from the south had made him run for three days north. But there can be no doubt, that the first island or land he discovered was to the east of Staten Land; and this same island had already been rediscovered, in 1756, by Mr Duclos Guyot, before captain Cook saw it, in 1775, and ascertained its position.

Mr Duclos Guyot, of St Malo, had the command of a Spanish vessel, named the Lion, and was returning from Lima. He had doubled Cape Horn, entered the Southern Atlantic Ocean, and was to the east of Staten Land.

"On the 28th of June, 1756," says Mr Duclos Guyot, "at nine in the morning, we fancied we saw land a-head of us, though at a great distance, appearing like a cloud, and of a great height. Our course at the time was north-north-east. The thickness of the weather did not allow us to satisfy ourselves of the truth of it: beside, not suspecting there could be any land nearer than Falkland's Islands, which at that time, by our estimation, were 135 leagues west-north-west of us; and finding ourselves by observation at noon in the latitude of $55^{\circ} 10'$, and in the longitude of $52^{\circ} 10'$ west of Paris by estimation, we held on our course, without paying any regard to the land.

"The 29th, at noon, having made a little island a-head, we put about, and, sounding, found no bottom with a line of three hundred fathoms. At nine o'clock we descried a continent, stretching about twenty-five leagues from north-east to south-west, full of steep mountains, of a fearful aspect, and of such extraordinary height, that we could scarcely discern their summits, though at the distance of more than six leagues. The quantity of snow, with which they were covered, prevented us from discerning, whe-

ther there were any wood on them. From the observations on which we can most depend, and which we were able to make, being then three leagues from the little island, which was midway between us and the main land, there appeared to be a bay, running very deep into the land, about eight leagues west from the little island. This seemed to us the only place capable of being inhabited. We might be distant from it ten or eleven leagues. It's extent appeared very considerable, both in length and breadth. At it's mouth on the larboard side, and west-north-west from us, there is a low point, the only one we could observe at the entrance: as it had the appearance of being separate from the main land, we took it to be an island, or at least a peninsula.

" The 30th, at day-break, our distance from this newly discovered land might be ten leagues. In this situation, we perceived no current, and we could find no bottom. We continually saw a great many birds, and sea-wolves.

" At noon, the land had the same appearance, except the summits of the mountains, which were covered with clouds. Our observation, on which, from the calm and favourable weather, we could depend, gave us the latitude of $54^{\circ} 50'$ south, and our longitude by estimation was $51^{\circ} 32'$ west.

" The 1st of July, at day-break, thinking ourselves at a sufficient distance from the shore, we steered east, to see whether the land stretched any farther to that point. At eight in the morning, we had seen the easternmost point, bearing by the compass north 5° east *, distant about twelve leagues. At noon, continuing the same course, we were, by estimation, in latitude $55^{\circ} 23'$, longitude west 51° .

" The 2d, wind from west-south-west to west-north-west, light gales, weather thick, with a great deal of snow. Course east-north-east. En-

* On the evening of the 28th of June, the day before the discovery, the variation of the compass was found to be $13\frac{1}{2}^{\circ}$ north-east, and on the 4th of July it was 13° .

deavouring to discover the extent of the land on this side, at day-break, it having fallen a dead calm, we found ourselves surrounded with masses of ice of different figures, several of which rose at least five-and-thirty fathoms above the water, and were more than half a league long. We observed, too, that there were various currents, and many more birds than usual, particularly a great number of pigeons, perfectly white, like those on the coast of Patagonia; and we saw likewise several whales. From all these marks we imagined, that we might be on a bank. Accordingly we hove the lead, but found no bottom. At this time we were out of sight of land: latitude, by estimation, $55^{\circ} 28'$, longitude, $49^{\circ} 40'$ west."

From this day forward Mr Duclos Guyot saw nothing more of this new land, which he named the Island of St Peter.

On making the island of St. Jago, one of the Cape Verdes, he found, as he had judged from the variation of the compass, which was from $13\frac{1}{2}^{\circ}$ to 13° , instead of 19° , as it ought to have been in the longitude at which he estimated the Island of St. Peter on seeing it, that the currents, after he had doubled Cape Horn, had carried him $10^{\circ} 56'$ east beyond his reckoning. "Consequently," says Mr Duclos Guyot, "we may ascertain the position of the land we discovered the 29th of June. Being ten leagues south, when we saw it with most certainty, on the 30th, our observed latitude was $54^{\circ} 50'$, and our longitude by estimation $51^{\circ} 32'$ west." Now if we deduct from this the $10^{\circ} 56'$, which the vessel had been driven eastward, there will remain, for the longitude of the island, $40^{\circ} 36'$ west of Paris, which Mr Duclos Guyot reduces to $40^{\circ} 30'$ for the easternmost part he saw: and he fixes the latitude of the southernmost at $54^{\circ} 20'$.

Captain Cook places the Island of St Peter, or Georgia, as he calls it, between $53^{\circ} 57'$ and $54^{\circ} 57'$ of latitude, and between $40^{\circ} 33'$ and $37^{\circ} 54'$ of longitude west from Paris. Cook's second Voyage, Vol. II. p. 218. Hence it appears, that the situation assigned to the same land by Mr Duclos Guyot is not very erroneous, though he was destitute of the means necessary for determining the longitude with precision. He was mistaken only

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in the length of the island from east to west; and no navigator could possibly fail of finding it from his directions, particularly if coming upon it from the west, to which he carried it about thirty leagues too far.

Mr Duclos Guyot adds, at the conclusion of what he says respecting the Island of St. Peter :

“ These are the remarks in which we can place most confidence; and we have no doubt, though we cannot positively assert it, *that there are other lands to the east of those we saw*: every thing confirms this: sea-weeds, ice, fishes, trees, and birds.” It was in 1756, that he expressed himself thus.

21. *Sandwich Land*, discovered in 1775. This is placed on the chart from the journal and observations of captain Cook. See his second Voyage, Vol. II. p. 222 and following.

This land recalls to mind the Gulph of San-Sebastian, and the lands marked on the ancient maps to the south and south-east of la Roche's Land.

22. *Christmas Sound*, on the south-western coast of Terra del Fuego. See the charts and journal of Cook's second Voyage, Vol. II. p. 177 and 198.

GREAT SOUTHERN OCEAN.

23. *Drake's Islands and Harbour*, placed by geographers a hundred and eighty or two hundred leagues west-south-west of Cape Horn. Several accounts of sir Francis Drake's voyage round the world have been published in England: these differ essentially with regard to the situation of the lands discovered by this celebrated navigator, after having passed the Strait of Magellan.

According to the most ancient of these accounts, that published by Hackluyt in his collection of English voyages *, after Drake's squadron had passed the Strait of Magellan, and entered the South Sea, September the 6th, 1578, it steered a north-west course for three days, after which the wind blew so hard from the north-east, that it could only make good a west-south-west course. This it continued for ten or twelve days, during which it could carry but little sail. The wind then increased to such a degree, that it was forced to drive under bare poles till the 24th of September. On this day one of the vessels parted company: the wind, becoming more moderate, allowed the others to carry sail, and they steered north-east for seven days. They then discovered some islands, for which they made, in order to come to an anchor: but the weather proved contrary, the wind getting round to the north-west, and their course being west-south-west. The following day, October the 1st, the weather being very foul, another vessel parted company, so that the admiral was left alone. Drake then ran as far as the latitude of 57° , where he anchored in a haven of an island, within gun-shot of the land, in twenty fathoms water. Here he remained three or four days, when, the wind having come round to the south, he weighed anchor, and stood for two days to the northward. He then discovered a little inhabited island, for which he made, and under which he lay to, while he sent a boat ashore, which came back with several birds, seals, &c.

Another account, published by Purchas in his *Hackluytus posthumus* †, says:

“ September the 7th, 1578, Drake was assailed by a storm, which drove him from the western mouth of the Strait of Magellan more than two hundred leagues of longitude, and carried him one degree south of the strait. From this point he ran as far as the latitude of 57° south, where he saw

* The principal Navigations, Voyages, Traffiques, and Discoveries of the English Nation, &c. London, 1598, 1599, 1600; fol. Vol. III. p. 744.

† *Hackluytus posthumus*, or Purchas his Pilgrims, &c. London, 1625; fol. Vol. I. p. 50, of the Circumnavigations of the Globe.

several islands, among which he anchored, and from which he procured very good water and excellent vegetables. He discovered another bay, where he found inhabitants, who went naked, and passed from one island to another in canoes; and with these he trafficked. Lastly, on leaving this bay, and sailing north, he fell in, on the 3d of October*, with three islands, one of which was remarkable for the prodigious number of birds he found there, surpassing, says the account, every thing that can be conceived, &c."

The third account is that of Francis Fletcher†, who went with the expedition as chaplain on board Drake's own vessel. It differs greatly from the former two: but it is the relation of an eye-witness, of a man who may be presumed to have been not altogether ignorant, while we know not on what authority the others are founded; and, as an eye-witness, Fletcher appears to us most worthy of credit; beside that, in his narrative, there is a consistency of facts, a regular series in the occurrences of the voyage, which both the other accounts want.

According to Fletcher, in the beginning of September, 1578, Drake was near the mouth of the Strait of Magellan next the Pacific Ocean. Having gotten thus far, he saw nothing but islands, the true channel between which it was impossible for him to distinguish. He anchored near one of the islands on the south; went himself in a boat to find out the passage; and certified himself, that it was open to the north. After having visited the island, and conversed with the inhabitants, he set sail; and on the 6th of September he was clear of the land. He greatly regretted, that he had not been able to land at the last of the points which he discovered on entering the South Sea; as he would have deposited there a certificate of his having taken possession: but he saw no place at which he could get on shore, and the wind did not allow him to stop.

* This date is evidently false: probably it is an error of the press in the original, and we should read 30 instead of 3.

† The World encompassed by sir Francis Drake, collected out of the Notes of Mr. Francis Fletcher, Preacher in this Employment, and others, &c. London, Nic. Bourne, 1652, in 4to.

On the 7th a violent gale came on, which drove him as far as the latitude of 57° south, without his being able to see any land. One of the vessels had separated from the fleet.

The weather then allowed him to stand to the north, and, on the 7th of October, he anchored in a bay a little northward of the same point, where he regretted his inability to deposit a certificate of taking possession on the 7th of September; which point must have been Cape Pillar.

A second gale soon drove him from this bay, where he lost his anchors. At this period, the vice admiral was parted from him by the storm, re-entered the strait, and, returning to the northern sea, reached England the 2d of June following. This circumstance induced him to give to the anchorage he quitted, the name of the Bay of Parting Friends.

Drake drove a second time as far as 55° south; and in this latitude, says the account, he found himself among those islands, situate to the south of America, which were spoken of at the time of his entrance into the Great Ocean, and which, with the continent, form the mouth of the strait. He anchored at these islands, and rested two days. Here he procured water, and found vegetables, which were very beneficial to the health of the crew.

A third gale obliged him again to put to sea. It was impossible for him to carry any sail; and every where to leeward appeared a coast studded with rocks and dangers.

Fortunately, a few leagues south of his preceding anchorage, he found another, still among the same islands. Here he saw the natives sailing from one island to another with their wives and children, and made some exchanges with them.

After three days, a fourth gale surprised him at anchor, and obliged him to cut his cable. He committed himself again to the sea, till at length, says Fletcher, on the 28th of October, we reached the southernmost part of

these lands, and thus discovered the extremity of America nearest the pole. This extremity, he adds, is in the latitude of 56° nearly [this is the latitude of Cape Horn]; beyond there exists no continent, and no island; the two seas here are confounded together.

To all the islands he had seen, from his leaving the strait to the island farthest south, Drake gave the name of *Elizabethides*.

Fletcher observes, that at the farthest island they had only two hours' night: and as the sun was then 7° from the tropic of Capricorn, we may conclude, says he, that, on the day when the sun is in the tropic itself, there must be no night. This conclusion proves, that Fletcher was very ignorant of astronomy: for it is well known, that, to have no night on the day of the solstice, we must be within the polar circle, that is to say, in the latitude of $66^{\circ} 32'$; and Fletcher has just said, that they were only in 56° . Yet this mistake has led some geographers to place Drake's islands under the antarctic circle.

After having remained two days at the last anchoring place, Drake sailed directly north-west, and the following day he fell in with two islands, abounding in birds. Here he staid but a short time, pursuing his course to the north-west on the 1st of November.

From examining the data, which Fletcher's narrative affords, with attention, we cannot avoid thinking, that the lands, which geographers have called by the name of Drake, are nothing more than the western part of Terra del Fuego; that Drake arrived at the islands of Cape Horn on the 28th of October; and that, sailing on the 30th to the north-west, he fell in with some of the innumerable islands which compose the archipelago of Terra del Fuego.

Though it thus appears proved, that the pretended Lands of Drake do not exist, it has not been deemed expedient to erase them from the chart. Almost all geographers, those excepted who have carried them to the lati-

tude of 60° , or the polar circle, have placed them about a hundred and eighty leagues west-south-west of Cape Horn; or 10° west of the meridian of the mouth of the strait, and in the latitude of 57° south.

There is no doubt, if the weather prove favourable, but M^r de la Pérouse will spend a few days in an examination, which will be of use for the complete removal of a geographical error. Cook, in 1769, and Furneaux, in 1775, pursued routes, which, if these islands had existed in the place assigned them by geographers, would have placed these navigators in a situation to have seen them, or at least to have perceived some sign, some indication of land: but it is well known, that neither observed any thing of the kind.

24. *Land of Theodore Gerard.* Theodore Gerard, one of the first Dutch navigators who visited the Great Ocean, was driven by a storm, in 1599, as far as 64° of south latitude, where he discovered a mountainous land covered with snow, the aspect of which appeared to him to resemble that of Norway*. It is placed 16° west of the meridian of Cape Horn.

25. *Lands which are reputed to have been seen by the Spaniards in 1714.*

To prove the existence, and fix pretty nearly the situation of these lands, we shall take the authority of the following report, extracted from a "Memorial for France, subservient to the Discovery of the Lands of the South," by Bernard de la Houpe, a seaman of St. Malo†.

"In 1714, the captain of a Spanish brigantine sailed from Callao for the Island of Chiloe; and being in the latitude of 38° south, five hundred and

* Dalrymple's Historical Collection of Voyages and Discoveries. London, 1770. 4to. Vol. I. p. 94.

† *Mémoire pour la France, servant à la Découverte des Terres Australes*, printed at Rennes, by Vatar, 15 pages, 4to.

See also Pingré's *Mémoire sur le Choix et l'Etat des Lieux pour le Passage de Vénus*, "Memoir on the Choice and State of Places for observing the Transit of Venus," on the 3d of June, 1769. Paris, Cavelier, 1767, 4to.

fifty Spanish leagues, of which seventeen and half make a degree, west of Chili, he discovered a high land, along which he coasted a whole day. From the fires which he perceived at night, he judged it to be inhabited. Contrary winds having obliged him to put into Concepcion, in Chili, he found there a French vessel, commanded by Mr du Fresne-Marion, who asserted that the Spanish captain's journal had been shown to him, and that he read in it the fact just related."

These islands have been placed on the chart of the Great Southern Ocean in 38° of south latitude, and between 108° and 109° of west longitude: a position which is conformable to the opinion of captain Cook. See his second Voyage, Vol. II. p. 274.

These lands or islands recall to mind a discovery attributed to Juan Fernandes, a Spanish pilot, by the name of the Islands of Juan Fernandes, which are laid down in maps west of Chili. This navigator died, without having pointed out the latitude and longitude of his discovery; and it is only known, that, about 1576, he proceeded 40° westward from the coast of Chili, having steered west and south-west, till, after a six weeks' voyage, he arrived at a land, which he says was a great continent. This distance of 40° west from Chili is far from that given to the land, which was reported to have been seen by the Spaniards in 1714. For the land of Juan Fernandes, see Dalrymple's Historical Collection, Vol. I. p. 53, and the French translation by de Freville, p. 125.

26. *Easter Island*. This island, discovered in 1722 by Roggewein, a Dutchman, was seen and visited in 1774 by captain Cook, who has ascertained its situation. See his second Voyage, Vol. I. p. 276.

The Spaniards touched at Easter Island on the 16th of November, 1770, and called it the Island of San Carlos, or St Charles. To the collection of charts delivered to Mr de la Pérouse is added the draught of this island, taken by the Spaniards, whose long-boats sailed round it. They place it in the latitude of $27^{\circ} 6'$ south, and in the longitude of $268^{\circ} 19'$ east from

the meridian of Teneriffe, that is $110^{\circ} 41'$ west of Paris: so that they have carried it about a degree and half too far eastward.

In 1770, the variation of the compass there was, according to the Spaniards, $2^{\circ} 30'$ east.

27. *Islands* said to have been *seen by the Spaniards*, in 1773, in 32° of south latitude, and 130° west of Paris.

This situation is given them from the report of M^r Croizet, captain of a French vessel, which captain Cook has followed. See Cook's second Voyage, Vol. II. p. 267.

It appears, however, that it may be questioned, for the following reasons.

It was on their return from Otaheitee, in 1773, that the Spanish vessels discovered some islands in the latitude of 32° ; and it is most probable, that the longitude they assigned to these islands, and of which M^r Croizet was informed, was affected by the same error as misled them with regard to that of Otaheitee. According to the extract from their voyage, communicated to one of M^r Surville's officers, during his stay at Lima, it appears, that they placed the Island of Otaheitee, which they called the Island of Amat *, in the latitude of $17^{\circ} 29'$, and the longitude of $233^{\circ} 32'$ east from the meridian of Teneriffe, which answers to $145^{\circ} 28'$ west of Paris. Now the longitude of this island has been settled by the numerous observations of captain Cook and the English astronomers at $151^{\circ} 52'$ west of Paris: the position assigned it by the Spaniards, therefore, errs $6^{\circ} 24'$ easterly.

If the longitude of the islands discovered in the latitude of 32° be affected by the same error, they ought to be placed at $136^{\circ} 24'$ west of Paris, instead of 130° , nearly on the same meridian with the Island of Pitcairn.

* From the name of the viceroy of Peru, by whose orders the expedition was undertaken.

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It is to be observed, however, that captain Cook ran down this meridian in his second voyage without perceiving any thing; and that he likewise saw nothing in his first voyage on crossing this parallel in the longitude of 128° and 129° : but between his two routes there remains a space of 8° from east to west, which has not been traversed, and in which we may hope to find the islands seen by the Spaniards in 1773 in the latitude of 32° .

In general it may be remarked, that all the ancient discoveries of the Spaniards, an opportunity of verifying which has been had in modern times, have been found much farther west than they reported them; and their modern discoveries in the Great Ocean, hitherto, appear to be affected with a similar error.

Captain Cook, being in the latitude of these islands, and nearly on the meridian in which they ought to be placed according to the correction indicated above, namely in the latitude of $32^{\circ} 30'$, and the longitude of $133^{\circ} 40'$ west of Greenwich, or 136° west of Paris, made an observation, which merits recital.

"This day," says he, July 22, 1773, "was remarkable for our not seeing a single bird. Not one had passed since we left the land [New Zealand], without seeing some of the following birds, viz. albatrosses, sheerwaters, pentadoes, blue petrels, and Port Egmont hens. These frequent every part of the southern ocean; but not a bird, nor any other thing, was seen, that could induce us to think that we had ever been in the neighbourhood of any land." Second Voyage, Vol. I. page 135, 6.

This observation may lead us to presume, that there is little hope of finding the islands or land seen by the Spaniards in the latitude of 32° , by searching for them in the meridian of 136° west of Paris; since captain Cook, being on this meridian, and nearly in the supposed parallel of these islands, saw not a single bird, or any sign of land. We are not justified, however, in questioning their existence: but, after having assigned the reasons, which must leave us in considerable uncertainty respecting their

real situation, it depends on M^r de la Pérouse, to give these reasons their due weight in his search after these lands. In conclusion of this article, it may be observed, that they are very probably farther west than the longitude of 136°, since the Spaniards fell in with them on their return from Otaheitee to Peru, and since, to be able to gain near 22° easting in 14 degrees and half only of latitude, with the trade winds to the south of the line, they must have made better than a true south-east course.

GREAT EQUATORIAL OCEAN.

28. *Islands of the South Sea*, or of the great equatorial ocean, between the latitudes of 26° and 10° south, in the space included between 130° and 170° west of the meridian of Paris.

For all the islands included within these limits we can only refer M^r de la Pérouse to the narratives of Byron's, Bougainville's, Carteret's, Wallis's, Furneaux's, and Cook's voyages; in which he will find geographical, physical, and historical details, that may be serviceable to him in exploring some of these islands, and in the stay he will have occasion to make. With regard to the islands anciently discovered in the same parallels, by Mendaña in 1567 and 1595, Quiros and Torrez in 1606, le Maire and Schouten in 1616, Abel Tasman in 1642, and Roggewein in 1722, they have been inserted in the chart of the Great Equatorial Ocean, delivered to M^r de la Pérouse for his voyage, agreeably to the information derived from the original accounts published of the discoveries of these navigators. The situations given them upon the chart, however, differ considerably from those, which geographers have thought they could assign them from the same relations: but the identity of some of these islands with those explored by modern navigators, which has been proved, having served to rectify some of these ancient positions, these corrected positions have been employed as data for adjusting, one after another, at least in part, the positions of some islands anciently found, but which have not yet been rediscovered. Still, how-

ever, there are many, respecting which extreme uncertainty remains ; because the journals of the ancient navigators are so barren of dates and observations, and so defective with regard to the circumstances of the voyage, that in general we can draw from them nothing but unsatisfactory conjectures. Their silence respecting the most interesting circumstances sometimes prevents the geographer from instituting any comparison, any collation with other journals, whence light might be derived, to guide us through the obscurity.

We shall proceed to give a summary view of the routes and discoveries of these ancient navigators, as far as they can be deduced from the indications given in the accounts, which appear most to deserve confidence. It is to be wished, that chance and a happy combination of circumstances may enable his majesty's vessels to fall in with some of these islands, lost to navigators, which, while they afford them resources in provision and refreshments for the pursuit of their discoveries, may contribute to extend the sphere of human knowledge.

1. THE VOYAGE OF MAGELLAN, in 1519*. From the Strait to which this navigator gave his name, he stood north-north-west as far as the equator, which he passed 9858 miles from the strait, and about the longitude of 170° east of Paris. In this long course he discovered only too little desert islands, two hundred leagues distant from each other ; namely, *St. Pedra*, or *St. Peter's*, in the latitude of 18° or 19° south ; and the Island of *Tiburons* (Sharks), in 14° or 15° south.

These islands, to which Magellan gave the common name of *Desventuradas* (Unfortunate Islands), yet remain unknown, and have not been inserted in the chart of the Great Equatorial Ocean, because their situation is not pointed out in a manner sufficiently precise. Among all the islands

* See *Voyage et Navigation des Iles Moluques, &c.* "A Voyage to the Molucca Islands" by the Spaniards, described by Ant. Pigafetta ; *la Collection de Ramusio* ; *Decadas da Asia, de Barros e Conto* ; *Navigations aux Terres Australes*, "Voyages to the Southern Countries," by de Brosse ; Dalrymple's Historical Collection ; and others.

discovered since Magellan, there are none except the Savage Island of Cook, and *L'Enfant-perdu* or Forlorn Hope of Bougainville, which we can take for the two islands in question; and these are two hundred leagues from each other, like the Desventuradas, and nearly in their latitude: Savage Island being in the latitude of $19^{\circ} 1'$, and longitude $172^{\circ} 30'$ west of Paris; and *Enfant-perdu* in latitude $14^{\circ} 6'$, and longitude $179^{\circ} 2'$ east.

2. THE VOYAGE OF MENDAÑA, in 1567*. From Callao, a harbour in Lima, Mendaña sailed westward, and ran fourteen hundred and fifty Spanish leagues, of seventeen and half to a degree, without seeing land. He then discovered

The *Island of Jesus*, a little inhabited island, in latitude $6^{\circ} 15'$ south:

Buxos de la Candalaria, or Candlemas Flats, a cluster of reefs with several little islands within them, of which the middle one is in latitude $6^{\circ} 15'$ south, a hundred and seventy leagues from the Island of Jesus:

The *Island of Isabella*, ninety-five leagues in length, and twenty in breadth; the south-east point of which is in latitude 9° , the north-west, $7^{\circ} 30'$. Here Mendaña anchored, in a harbour on the north coast; and a brigantine, sent thence on discovery, added to the number the following islands.

Malaita, so called by the Indians, a large island, fourteen leagues east of an extensive bay, in the latitude of 8° .

La Galera, a little island, five leagues in circumference, surrounded with reefs.

Buena Vista, twelve leagues in circumference, in the latitude of $9^{\circ} 30'$.

* *Geographia indiana de Herrera*; *Historia de las Indias*, by Lopez Vás; *Navigations aux Terres Australes*, by de Broses; Dalrymple's Historical Collection; *Découvertes dans la Mer du Sud*, "Discoveries in the South Sea;" &c.

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La Florida, twenty-five leagues in circumference, in the same latitude.

St. Dimas.

St. German.

La Guadelupa.

} Forming a chain, that stretches east and west
with Florida.

Sesarga, in the latitude of $9^{\circ} 30'$, an island of a circular figure, eight leagues in circumference, with a volcano in the middle.

Guadalcanar, a very extensive land, in which a good harbour was found.

St. George, near the Island of Isabella, from which it is separated only by a channel. Here pearls were found, and a good harbour.

St. Christoval, or *St. Christopher*, a narrow and mountainous island, with a good harbour, in latitude 11° .

Sta. Catalina, or *St. Catherine.* } Two little islands, east of *St. Christo-*
St. Anne. } pher's, about three leagues distant from
each other.

A good harbour was found on the eastern part of the last-mentioned island.

Beside these islands, mentioned in the narrative of Christopher Suarez de Figueroa, several others are named in the descriptions given by Herrera and Bry, and to be seen on ancient maps: such are *St. Nicholas*, *Aracifes*, *St. Mark*, *St. Jerome*, &c.

All these islands, since known by the name of Solomon's Isles, appear to be the Land of the Arsacides, discovered by Surville, commander of the ship *St. John Baptist*, in 1769.

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MENDAÑA'S SECOND VOYAGE, in 1595*. From Payta, on the coast of Peru, he ran westward a thousand leagues, without seeing land. He then discovered :

The *Marquesas*, or Marquis of Mendoza's Islands, between 9° and 10° south, four islands, which he named *Magdalena*, *St. Pedro*, *Dominica*, and *Sta. Christina*. On the west of the last he found a good harbour, which he named *Madre de Dios*. These were rediscovered in 1774, by captain Cook †.

The *Islands of St. Bernardo*, in the latitude of $10^{\circ} 45'$, and fourteen hundred leagues from Lima: four little, low, sandy islands, surrounded by a reef. They might be, in the whole, eight leagues in circumference. These appear to be the same as were seen in 1765 by commodore Byron, who called them the *Islands of Danger*; and it is from his course, corrected, that they are laid down in the chart, in latitude $10^{\circ} 51'$, longitude $169^{\circ} 30'$ west of Paris.

Solitary Island, in the latitude of $10^{\circ} 40'$, and 1535 leagues from Lima, a little circular island, a league in circumference. It has never been seen since, but its situation, deduced from its distance from the Islands of St. Bernardo and Santa Cruz, appears to be sufficiently accurate: it is in latitude $10^{\circ} 40'$, longitude $178^{\circ} 20'$ west.

The *Island of Santa Cruz*, a large island, with a good harbour, in which Mendaña anchored, in latitude $10^{\circ} 20'$, and 1850 leagues from Lima. It was visited anew in 1768 by captain Carteret, who named it *Egmont Island*, making one of Queen Charlotte's Islands: it is from the route of this navigator, that it has been placed in the chart at the latitude of 11° , and the longitude of $161^{\circ} 35'$ west from Paris.

* *Navigations aux Terres Australes*; Historical Collection; *Découvertes dans la Mer du Sud*.

† Cook added another to the number, the northernmost of the cluster, to which he gave the name of Hood's Island. See his *Second Voyage*, Vol. I. p. 298. T.

VOYAGE ROUND THE WORLD.

4. The VOYAGE OF QUIROS AND TORREZ, in 1606. From Callao they sailed south-west and west, without seeing land, till they were a thousand leagues from the coast of Peru, when they discovered :

The *Island of the Incarnation*, in latitude 25° south, and a thousand leagues from Peru ; a little island, four leagues in circumference, and so flat, that it appeared not perceptibly raised above the level of the sea.

St. Juan Baptista, or St. John Baptist, an island twelve leagues in circumference, and somewhat elevated, two days and half sail to the west of the former.

St. Elmo, six days' sail from St. Juan Baptista ; an island thirty leagues in circumference, surrounded by a reef of coral, and the centre occupied by the sea.

Los 4 Coronades (Four Crowns), four inaccessible islands, one day's sail from St Elmo.

St. Miguel, or St. Michael, four leagues west-north-west from the Los 4 Coronades. It is ten leagues in circumference, and lies north and south.

La Conversion de St. Pablo, or Conversion of St. Paul, half a day's sail west-north-west of St Michael.

La Dezena, four days' sail from the Conversion of St Paul, and about $18^{\circ} 40'$ of latitude.

La Sagittaria, one day's sail from Dezena: a large island, the north-west point of which is in the latitude of $17^{\circ} 40'$. Here they learned, that there were other lands to the west.

There is every reason to believe, that the Sagittaria of Quiros is the

Island of Otaheitee: the latitude, the direction of the coast along which they sailed, and the lands spoken of to the west of la Sagittaria, agree perfectly with Otaheitee. The Dezena of Quiros must consequently be the Osnaburg Island of Wallis, Boudoir of Bougainville, Maitea of Cook, east-south-east of Otaheitee *.

The other islands, preceding Dezena, appear not to have been since rediscovered. Cook imagines, that the Island of Pitcairn, discovered by Carteret, is the Island of St Juan Baptista of Quiros. But the difference in the size of the two islands will not allow us to embrace this opinion: St Juan Baptista is twelve leagues in circumference; Pitcairn, only three. Beside, the distance of a thousand leagues from the Incarnation of Quiros to the coast of Peru would carry this island some degrees to the west of Pitcairn, and still more the Island of St Juan Baptista, which is two days' sail west of the Incarnation, as observed above. It may be remarked, that the Marquesas, which are six degrees west of the meridian of Pitcairn, were stated by Mendaña to be a thousand leagues from the coast of Peru.

According to Mr Dalrymple, Historical Collection, Vol. I. p. 5, the island of St Juan Baptista would be in the latitude of 26° , and that of St Elmo in 28° . Be this as it may, it is to the south-east of Otaheitee, that we may hope to rediscover these ancient islands of Quiros.

Departing from Sagittaria, and continuing his course westward, Quiros discovered the following islands.

La Fugitiva, two days' sail, or two days' and half, from Sagittaria.

* It appears from these discoveries of Quiros, that to the south-south-east and south-east of Otaheitee there must be a pretty considerable chain of islands, extending perhaps much farther south, even as far as the latitude of 32° , where islands were seen by the Spaniards in 1773. If it were admissible in the present day to cite ancient maps, and to pay any regard to them, we should be tempted to suppose, that the continent, which these maps represent as discovered by Ferdinand Gallego, and extending west-north-west and north-west from Cape Horn to New Guinea, is nothing more than this chain of islands, which extends farther to the south-east than the point from which the discoveries of Quiros commenced. It would lie farther west than captain Cook's first route, in a part of the ocean that, in modern days, has not been visited.

Quiros saw it to the north-east ; but, being too far to leeward, could not fetch it.

La del Peregrino, or the Pilgrim, a day's sail from *la Fugitiva*. Here, likewise, the wind did not allow him to land.

We know not well where to place these two islands, unless it may be supposed, that they are some of the Society Islands, or others yet unknown to the north-east of these.

St. Bernardo, six days' sail from the Pilgrim, in the latitude of $10^{\circ} 30'$ south, a low island, ten leagues in circumference, with the sea, or a salt lake, in the centre.

This island must not be confounded with those of *S^t Bernardo*, discovered by Mendaña, which were four in number. Beside, in a memorial presented to Philip III. king of Spain, Quiros mentions no island by the name of *S^t Bernardo*, but gives the name of *Nuestra Señora del Socorro* (our Lady of Help) to that which immediately follows the Pilgrim. It appeared to be uninhabitable.

Gente Hermosa, or the Island of the Handsome Nation, seven days' sail from the Island of *S^t Bernardo*, and in the same latitude as the *Santa Cruz* of Mendaña, that is, in 11° south. It is six leagues in circumference ; the inhabitants were the fairest and handsomest people he had yet seen : the women, particularly, were extremely beautiful, and clothed with light flowing garments. In the memorial of Quiros, mentioned above, the name of *Gente Hermosa* does not appear, but that of *Monterey*, who was viceroy of Mexico.

Taumago, thirty-three days' sail from the Island of the Handsome Nation, and nearly in the parallel of that of *Santa Cruz*, since Quiros was steering for this island. It is a pretty large island, where he found wood, water, refreshments, and very peaceable inhabitants. Here he learned, as he did

likewise from an Indian, whom he took from this island and carried to Mexico, that there were many other islands near, as *Chicayayna*, *Guaytopo*, *Mecaraila*, *Fonofono*, *Pilen*, *Naupau*, &c. which have not been discovered by any navigator. It is observable, that, on the passage from the Island of the Handsome Nation to that of Taumago, signs of land were almost constantly seen, as pumice stones in great quantity, and numerous flocks of birds.

Tucopia, six days' sail from Taumago, in the latitude of 12° south. On running down the coast of this island, where he could not land, Quiros was informed by the natives, that there were extensive countries to the south, and he made sail in search of them.

Nuestra Señora de la Luz (our Lady of Light), a high land, in $14^{\circ} 30'$ of south latitude. This island appears to be the *Pic de l'Etoile*, on the north of the Great Cyclades of M^r de Bougainville.

The southern land of *Espiritu Santo* and the harbour of *Vera Cruz*. This land, which was the boundary of the voyage of Quiros, has been visited since by M^r de Bougainville, who named it the Greater Cyclades, and subsequently by captain Cook, who gave it the appellation of the New Hebrides. Cook has retained the name of *Espiritu Santo* for the northern part. On quitting this land, Quiros sailed for New Spain, or Mexico, where he arrived without making any other interesting discovery: but Torrez, who was separated from the fleet, sailed west, and passed between New Holland and New Guinea, as Cook has since done in the *Endeavour*.

5. VOYAGE OF LE MAIRE AND SCHOUTEN, in 1616*. From the Island of Juan Fernandez, at which these navigators touched, after having discovered the Strait of le Maire, and been the first that ever doubled Cape

* *Diarium vel Descriptio Itineris facti a G. Schoutenio*, "Journal or Description of a Voyage performed by W^m Schouten;" *Miroir Oost en West Indical*, &c. "Mirror of the East and West Indies;" *Speculum Orientalis Occidentalisque Navigationis*, &c. "The Mirror of Voyages to the East and West;" *Navigations aux Terres Australes*; Historical Collection, &c.; *Découvertes dans la Mer du Sud*, &c.

Horn, they sailed west-north-west, without seeing any land, till they were 925 Dutch leagues, of which fifteen make a degree, from the coast of Peru, when they discovered the following islands.

Hond Island, or the Island of Dogs, in the latitude of $15^{\circ} 12'$ south, and $61^{\circ} 40'$ west of the Peruvian shore; a small island, about three leagues in circumference, but so flat, that it is partly overflowed at high water.

Sondre-grond, or Bottomless Island, in latitude $15^{\circ} 15'$, and a hundred leagues west of Hond Island. It was inhabited, and occupied in circuit twenty leagues. According to le Maire's account, however, it's latitude would be $14^{\circ} 35'$, instead of $15^{\circ} 15'$, which Schouten gives.

Waterland, fifteen leagues from Sondre-grond, in latitude $14^{\circ} 16'$. Here they found water, and a species of cresses, but the island appeared not to be inhabited.

Vlyegen, or the Isle of Flies, twenty leagues from Waterland, in latitude $15^{\circ} 30'$; a low, inhabited island, where they were pestered with prodigious numbers of flies.

Cocos Island, twenty-three days' sail from the Isle of Flies, in latitude $16^{\circ} 10'$; a high land, appearing in the shape of a mountain, well-peopled, and covered with cocoa-trees.

Traitor's Island, two leagues south of Cocos Island, in latitude $16^{\circ} 5' *$; a flat, inhabited land.

The last two islands were visited in 1767 by captain Wallis, who gave the name of Boscawen's to Cocos Island, and that of Keppel's to Traitor's Island: the latitude of the former he found to be $15^{\circ} 50'$ south; that of

* This is evidently a mistake, perhaps an error of the press, which the subsequent paragraph, however, rectifies. The latitude here should be $16^{\circ} 10'$, and that of Cocos Island $16^{\circ} 5'$. T.

the latter, $15^{\circ} 55'$; differing only $15'$ from that assigned by le Maire and Schouten.

It is observable, that, the day before their arrival at these islands, le Maire and Schouten fell in with a canoe full of Indians, under sail, standing to the southward, which indicates other lands in that quarter.

Goede Hoop, or the Island of Good Hope, on the same parallel as Cocos Island, thirty leagues west of it. It was inhabited, and extended about two leagues in length from north to south.

Hoorn Islands, or Horn Islands, in the latitude of $14^{\circ} 56'$, and about 1550 leagues from the coast of Peru; two islands, within gun-shot of each other, inhabited, with a good harbour on the south of the greater. Here they found all kinds of refreshments.

Thirteen days after having left Hoorn Islands, and 155 leagues from them, in the latitude of 4° south, they had signs of land. They then discovered

Four small inhabited islands, surrounded with shoals and sand-banks, in latitude $4^{\circ} 30'$, and five days before they made that part of New Guinea, which is now called New Ireland:

Twelve or thirteen islands, occupying about half a league from south-east to north-west, three days before their arrival at New Guinea:

Three low islands, covered with trees, and named on that account *Groen-eylands* or Green Islands, the day before they arrived at New Guinea:

Saw the Island of *St. Jan* or St. John.

New Guinea, or the eastern coast of New Ireland, distant from the coast of Peru, by estimation, 1840 Dutch leagues.

VOYAGE ROUND THE WORLD.

N. B. Of all the islands seen during this voyage none have since been recognised by any other person except Cocos and Traitors' Islands, which were rediscovered by Wallis, from whose journal they are laid down on the chart, and the others placed by their distance from these two.

6: The VOYAGE of ABEL TASMAN, in 1642*. Sailing from Batavia, Tasman touched at the Isle of France, then called the Island of Mauritius: he thence steered south, as far as the latitude of 40° or 41° ; and afterwards east, till he arrived in the longitude of 163° east from the meridian of Teneriffe, or 144° from the meridian of Paris. He then saw

The land called *Van Diemen's*, in latitude $42^{\circ} 25'$, longitude 163° east from Teneriffe: here he anchored in a bay, to which he gave the name of Frederic Henry, in latitude $43^{\circ} 10'$, longitude $167^{\circ} 55'$:

Another land, high and mountainous, which he named *New Zealand*, in latitude $42^{\circ} 10'$, longitude $188^{\circ} 28'$; and where he anchored, in a large bay, in latitude $40^{\circ} 49'$, longitude $191^{\circ} 41'$: the conduct of the natives induced him, to give it the name of Murderers' Bay.

The *Island of Pylstaarts*† (Wild-Ducks), in latitude $22^{\circ} 35'$, longitude $204^{\circ} 15'$; a high and steep island, two or three leagues in circumference:

The *Island of Amsterdam*, in latitude $21^{\circ} 20'$, longitude $225^{\circ} 9'$; a low and flat land, the inhabitants of which were kind and hospitable: this is the Tongataboo of Cook, one of the Friendly Islands:

The *Island of Middleburg*, lofty and inhabited, to the south-east of Amsterdam: the Eooa of Cook:

* *Oud en nieuw Oost Indien, &c.* "The East-Indies, ancient and modern," by F. Valentyn; *Navigations aux Terres Australes*; Historical Collection; *Découvertes dans la Mer du Sud*.

† *Pylstaart*; *anas acuta*, Lin.; the pintail duck, Pennant; sea-pheasant, or cracker, Willoughby. T.

Uitardam, *Namokoki*, and *Rotterdam*, inhabited and cultivated islands, in latitude $20^{\circ} 15'$, longitude $206^{\circ} 19'$: the natives give to the last the name of Annamooka, which Cook has retained:

The *Islands of Prince William*, and the *Shoals of Heemskirck*, in latitude $17^{\circ} 19'$, and longitude $201^{\circ} 35'$: these are eighteen or twenty small islands, surrounded with reefs and shoals:

The *Islands of Ontong-Java*, in latitude $5^{\circ} 2'$, and ninety Dutch leagues or miles from that part of New Guinea now called New Ireland: these are a cluster of small islands, in number twenty-two:

Marken Islands, three days' sail from the preceding: another cluster, consisting of fourteen or fifteen inhabited islands, which had already been seen by le Maire and Schouten:

The *Green Islands*, four days' sail from the preceding, and one day's sail before he arrived at St. John:

The *Island of St. John*:

Cape St. Mary, on the western side of New Guinea, now New Ireland, in latitude $4^{\circ} 30'$, longitude 171° .

From this place he stood north-west, along the coast of New Ireland, passing the islands of Anthony Cave, Garret Dennis, &c.; then south, and west, along the northern coast of New Guinea.

All the lands and islands seen in this voyage have been recognised in our own times, and found in the places assigned them by Tasman. They are laid down on the chart from the routes and observations of modern navigators.

VOYAGE ROUND THE WORLD.

7. THE VOYAGE OF ROGGEWEIN, in 1722 *. From the island of Juan Fernandez, Roggewein sailed west-north-west, in order to explore Davis's Land, which he could not find. He discovered the following islands.

Easter Island, in $27^{\circ} 4'$ of south latitude, $265^{\circ} 42'$ of longitude east from the meridian of Teneriffe, according to the author of *Vies des Gouverneurs de Batavia*, which answer to $113^{\circ} 18'$ west of Paris: an inhabited island, sixteen Dutch leagues in circumference, and remarkable for colossal figures or statues erected in great number along the shore. It has been visited since by Cook, who found it in latitude $27^{\circ} 5'$, longitude $112^{\circ} 6'$ west of Paris, and gave it the name of Easter Island. It was also seen in 1770 by the Spaniards, who place it in latitude $27^{\circ} 6'$, longitude $268^{\circ} 19'$ from the meridian of Teneriffe, which answers to $110^{\circ} 41'$ west of Paris. They gave it the name of *San Carlos*.

Carls-hof, or Charles's Court, in $15^{\circ} 45'$ south, and after a run of 800 leagues from Easter Island. According to the French account of this voyage, it is a little, low island, with a kind of lake in the interior part. Roggewein supposed it to be the Island of Dogs of le Maire and Schouten, and the Dutch account marks neither its latitude nor longitude. It is laid down in the chart by its distance from the Pernicious Islands, which are twelve leagues to the westward of it, and the situation of which is known.

The *Pernicious Islands*, in latitude $14^{\circ} 41'$ south, and twelve Dutch leagues west of Carls-hof. These are four low, inhabited islands, from four to ten leagues in circumference. Roggewein lost here one of his vessels, whence he gave to one of the islands the name of Pernicious; two he called the Two Brothers; and the fourth the Sister. Here also five of his crew ran away, and were left behind. There is reason to believe, that these are the same with Palliser's Islands, discovered by Cook in his second

* *Expédition de trois Vaisseaux, &c.* "Voyage of three Ships, &c." *Vies des Gouverneurs de Batavia*, "Lives of the Governors of Batavia;" *Navigations aux Terres Australes*; Historical Collection; *Découvertes dans la Mer du Sud*.

voyage; and this is the opinion of the English navigators. See Cook's second Voyage, Vol. I. pages 315 and following.

The *Island of Aurora*, eight leagues from the Pernicious Islands, towards the west. A small island, four leagues in circumference, which has not been recognised since.

Vesper, or Evening Island, a low land, twelve leagues in circumference, discovered the same day as the Island of Aurora, and equally unknown at present.

The *Labyrinth*, a cluster of islands, six in number, delightfully pleasant, and occupying together a circuit of near thirty leagues: They are twenty-five leagues west of the Pernicious Islands. The Dutch account does not mention the Labyrinth, but an inaccessible island, which it places in latitude $15^{\circ} 17'$ south. There is reason to think, that they are the same as were seen since by commodore Byron, and called by him the Prince of Wales's Islands.

Recreation, in $15^{\circ} 47'$ south latitude, according to the Dutch account, in 16° , according to the French. An inhabited island, twelve leagues in circumference; the land high, and covered with large trees. Here refreshments were procured. It is laid down on the chart in longitude $155^{\circ} 20'$ west of Paris, taking a medium of the differences of longitude between this island, Easter Island, and New Britain, or New Ireland, as deduced from the chart annexed to the Dutch account of this voyage. This island has not yet been recognised.

Bauman's Islands, in 15° south latitude, according to the Dutch chart mentioned above, in 12° , according to the French account. These are several in number, of ten, fifteen, or twenty leagues, in circumference, with excellent anchoring places, and inhabited by mild and peaceable people. In the chart they are placed, conformably to the Dutch charts, in the latitude of 15° , and about the longitude of 173° west of Paris, from the dif-

ference of longitude which the same Dutch chart gives between these islands and New Britain.

Solitary Island, called *Single Island* on the English maps, in $13^{\circ} 41'$ south latitude, according to the Dutch account, and a day and half's sail, or about thirty leagues, west of Bauman's Islands. It appeared like two islands, and has been supposed to be the Cocos and Traitors' Islands of le Maire and Schouten: but the difference of latitude will not allow us to adopt this opinion.

Tienhoven and *Groningen*, two considerable islands, seen a few days after leaving Solitary Island. Roggewein ran along the coast of Tienhoven for a whole day, without seeing the end of the island; which appeared to stretch toward Groningen in a semicircle. Neither of these islands is noticed in the Dutch narrative or in the chart; and the French account, where they are mentioned, does not point out their latitude, or their distance from any other land, so that it is impossible to give them any place in the chart.

29. *New Caledonia*. The ancient navigators do not appear to have had any knowledge of this island. Mr de la Pérouse is referred for an account of it to captain Cook, who discovered it in his second voyage. See Cook's second Voyage, Vol. II. p. 103 and following, and the chart relative to the discovery.

30. The *Island of Santa Cruz of Mendaña*, discovered in his second voyage, in 1595; or the *Islands of Egmont and Queen Charlotte*, visited by Carteret in 1767. See the president de Brosses's *Navigations aux Terres Australes*, Vol. I. p. 249 and following: Dalrymple's *Historical Collection*, Vol. I. p. 57 and following, and p. 185: *Découvertes dans la Mer du Sud*, translated from Dalrymple, by Fréville, p. 131: Carteret's Voyage, in Hawkesworth, Vol. I. p. 568 and following.

31. *Tierra del Espiritu-Santo of Quiros*, 1606, or *Grandes Cyclades* of

Bougainville, 1768, or New Hebrides of Cook, 1774. See *Navigations aux Terres Australes*, Vol. I. p. 306 and following, Vol. II. p. 243, p. 348, and following: Dalrymple's Historical Collection, Vol. I. p. 95 and following, and p. 203, and page i of the Data: *Découvertes dans la Mer du Sud*, p. 201 and following, and p. 427: *Voyage de Bougainville*, p. 242 and following: Cook's second Voyage, Vol. II. p. 23 and following, and the chart of the New Hebrides, *ibid.* p. 25.

All this part of the Great Equatorial Ocean has been laid down upon the chart from the journal and observations of captain Cook.

32. The *Land of the Arsacides*, discovered by Surville in 1769..

Surville first got sight of this land on the 7th of October, 1769*. It appeared to him very lofty, and well wooded. At the moment he made it, his vessel was in the latitude of $6^{\circ} 57'$ south, and longitude by estimation $152^{\circ} 28'$ east of Paris: but this longitude, corrected by that of New Zealand, which Cook has determined, and where Surville afterwards touched, ought to have been $153^{\circ} 45'$ at the point where he made the land, which is but a few leagues north-west of his Port Praslin.

He ran along the coast east-south-east, and found a harbour, formed by a group of islands, where he anchored. To this harbour he gave the name of Port Praslin. From the time of his making land till his reaching this harbour, he had seen a number of small islands, which appeared, at the first view, to form part of the continent, but which he afterwards discovered to be islands, distant about three leagues from the main land†. On Friday, the thirteenth, he anchored in Port Praslin, of which he has given a plan‡.

* Extracted from his manuscript journal.

† The different views of this coast, as delineated on board the vessel, may be seen, as well as Surville's journal entire, in the *Découvertes des Français en 1768 et 1769 dans le Sud-Est de la Nouvelle Guinée, &c.* "Discoveries of the French to the South-East of New Guinea in 1768 and 1769;" printed at Paris, at the Royal Printing-office, 1790. (*French Editor.*)

‡ *Ibid.*

The islands which form it are covered with trees, and the land is partly overflowed at high water.

The natives of the country appeared to be very mistrustful: and after having given the French to understand by signs, that they might water at a place which they pointed out at the extremity of the harbour, they enticed them thither, to make them fall into an ambuscade. A pretty severe engagement took place, when Surville's people re-embarked in their boats: several were wounded; and they were obliged to kill thirty or forty of the savages.

The people who inhabit this land are in general a kind of negroes: they have black, woolly hair, flat noses, and thick lips. They powder their heads with lime, which, no doubt, burns their hair, and makes it appear red. The custom of powdering the head was observed also by M^r de Bougainville, among the inhabitants of Choiseul Bay, on the north-west coast of this same land. They ornament themselves with bracelets of shells, wear whole shells round their necks, and girdles of human teeth, those, no doubt, of enemies made prisoners in war: and most of them have a large hole bored through each ear and the cartilage of the nose, in which they stick bunches of flowers. Their weapons are lances eight or nine feet in length, clubs or bludgeons of the same substances, and bows and arrows, the latter of which are reeds forty or forty-four inches in length, armed at the point with a sharp-edged bone. They carry a buckler made of rushes and the bark of trees, two or three feet long and one foot wide. Their canoes are very light, and from fifteen, or twenty-five, to sixty-five feet in length. They cover the seams of them with a kind of pitch, or cement, which renders them impervious to water.

Surville could not procure any refreshments from these people. He seized a boy about thirteen or fourteen years of age, however, whom he intended to employ as an interpreter in the course of his discoveries.

He left Port Praslin the 21st of October, and continued sailing along the

coast, first toward the east-south-east, and afterward south-east. In several places he lost sight of the shore, and could see no land in the intervals: whence he reasonably concluded, that these openings or breaks indicated either very deep bays and gulfs, or channels dividing the land into several islands, and thus forming an archipelago. On his way several canoes left the shore, and came aboard him. To the savages in these canoes he gave a few trifling presents, but he every where perceived symptoms of extreme mistrust. Like all the inhabitants of the islands in the Great Equatorial Ocean, these people are great thieves.

Surville observed, that the young Indian whom he brought from Port Praslin could not make himself understood by the inhabitants of the coast; of whom indeed he was greatly afraid: which led Surville to suppose, that this archipelago is very extensive, and that the people of the different islands have no communication with each other, but for the purpose of making war.

When he came to the island which he named *de la Contrariété*, lying about $4^{\circ} 30'$ east, and 2° south, from Port Praslin, he found the people similar to the natives of this harbour, stout, entirely naked, from five feet to five feet and half high*, and with woolly hair, which they powder with lime. They have the same weapons also, and the same ornaments: but they came aboard boldly, accepted every thing that was offered them, and endeavoured to steal what was not. The country, in this part, appeared very pleasant; and the odour of aromatic herbs, which reached the vessel, made Surville regret, that he could not land in a gulf, which he supposed to lie to the west of some islands which he called *les Trois Sœurs*, the Three Sisters.

When he had reached the latitude of $11^{\circ} 7'$ south, and the longitude of 159° east of Paris, he discovered a large cape, with two small islands before

* The reader will observe, that, to avoid mistake, the French measure is retained here and elsewhere. It's proportion to the English is as 1068 to 1000. T.

it, and from this point he saw the land stretch west and south-west, till it was lost in the horizon. As he perceived no land beyond this cape, and was eager to get into the open sea, he named it *Cap oriental des Arsacides*, Eastern Cape of the Arsacides, and the islands *Iles de la Délivrance*, Deliverance Islands.

These are the outlines of Surville's discovery, with which is connected a land seen by M^r de Bougainville, being the north-west part of the Land of the Arsacides. See his Voyage, p. 264 and following.

It will be proper to consult likewise the account given by Figueroa of Mendaña's discoveries on his first voyage, in 1567 *. There is every reason to presume, from numerous calculations and comparisons, that the Islands of Solomon, discovered at that time by Mendaña, are the same with those rediscovered by Surville in 1769.

M^r de la Pérouse will find, in the collection of manuscript charts delivered to him, one of modern discoveries in these parts, where an attempt has been made, to delineate the discoveries of Mendaña, as they may be traced from the descriptions given by Figueroa, Herrera, and other Spanish historians, who disagree both with respect to the extent of the several islands, and their relative situations: but it was sufficient to point out the presumed identity of the discoveries of Mendaña and Surville; and we are persuaded, that M^r de la Pérouse's researches in these parts will establish the truth of what is here offered only as a probability.

33. The *Lands of Louisiade*, discovered in 1768 by M^r de Bougainville.

Before this period these lands were unknown. We had only a confused account of a discovery made in 1705, on the northern coast of these lands, by the Dutch yacht *Geelvinck*, or the Yellow-hammer.

* See *Echos de D. Garcia Hurtado de Mendoza, quarto Marquis de Cannete, per Christoval Suarez de Figueroa*, "Echoes of D. G. H. de Mendoza, fourth Marquis of Cannete, by C. S. de Figueroa," Madrid, 1613; Dalrymple's Historical Collection, Vol. I. p. 176; *Découvertes dans la Mer du Sud*, p. 89.

These lands are delineated on the chart N° 9.

See, for Louisiade, Bougainville's Voyage, p. 255 and following; and, for the account of the Geelvinck *, *les Navigations Australes* of the president de Brosse, Vol. II. p. 444.

34. *Endeavour Strait*, between New Holland, and New Guinea.

See Cook's first voyage, in Hawkesworth's Collection, Vol. III. p. 610 and following.

Torrez, who commanded one of the vessels in the fleet of Quiros, in 1606, appears to be the first navigator, that ever passed between New Holland and New Guinea.

See an account of the voyages of Quiros in the authors quoted in these notes.

35. *Northern and western coasts of New Holland.*

We have nothing authentic, or sufficiently minute, respecting this part of the largest island on the globe.

M^r de la Pérouse is referred to the voyages of Dampier for the northern coast, some points of which were seen by this accurate seaman; and to the *Navigations aux Terres Australes* of the president de Brosse, Vol. II. p. 438, for the northern and western coasts, and Vol. I. p. 426 and following, for the discoveries of the Dutch in New Holland.

To the collection of manuscript charts, delivered to M^r de la Pérouse, has been added a copy of that quoted by the president de Brosse, which

* It is now proved, that the situation assigned at the time to the lands discovered by the Geelvinck was not the true one. See *les Découvertes des Français en 1768 et 1769, dans le Sud Est de la Nouvelle Guinée*, preface, p. xiv. (French Editor.)

contains the examination of part of the western coast made by the Dutch, with the addition of soundings and details taken from the journals of the English navigators, by whom it has been more recently visited.

36. The *southern Land of van Diemen*, in the south part of New Holland.

See, in the account of Cook's second Voyage, what has been said by Furneaux, who visited it in the month of February, 1773. Vol. I. p. 107 and following.

See also Cook's third Voyage, Vol. I. p. 91.

37. The *Isle of New Zealand*. This was discovered by Abel Tasman, a Hollander, in 1642; but as the account he has given of it is very loose, it would answer no purpose to recite it; and Cook's voyages leave nothing to be wished for respecting this country.

See Hawkesworth's Collection, Vol. II. p. 281 and following: Cook's second Voyage, Vol. I. p. 69; *ib.* p. 225 and following; Vol. II. p. 146 and following: Cook's third Voyage, Vol. I. p. 118 and following.

In these works will be found, beside descriptions, and astronomical and nautical observations, all the charts and plans of particular places which were delineated by the English navigators.

38. The *Marquesas*, or Marquis of Mendoza's Islands, discovered by Alvaro Mendaña, a Spaniard, in 1595. See note 28, 3, Mendaña's second voyage.

These islands were rediscovered in 1774, by captain Cook, to whose account only we can refer for every thing relative to their geographical situation, and the description of them. See Cook's second Voyage, Vol. I. p. 297 and following.

39. The Islands of *Nublada*, *Rocca-Partida*, and others, east-south-east of the Sandwich Islands.

It is supposed, that Juan Gaetano, a Spaniard, was the first navigator who had any knowledge of these islands, which he saw in 1542.

He sailed from Porto Santo, near the Harbour of the Nativity, on the coast of Mexico, in about 20° of north latitude.

He discovered successively the islands of *Nublada*, *Rocca-Partida*, and, 200 leagues west of the latter, a shoal, in the latitude of 15° or 14° north, on which he had only seven fathoms of water. Continuing his course westward, he fell in with some other islands, to the west of Sandwich Islands. *Raccolte di Navigazioni e Viaggi da Ramusio*, "Ramusio's Collection of Voyages and Travels," Vol. I. p. 375.

The islands discovered by Gaetano have been laid down in the chart of the Great Equatorial Ocean, delivered to M^r de la Pérouse, from that in Anson's Voyage, which was copied from one found on board the *Manilla* galleon, when she was taken by the *Centurion*.

40. *Sandwich Islands*, discovered in 1778, by captain Cook, in his third voyage.

Though the course of the Spanish galleons should have enabled these vessels to discover islands situate between the parallels of 19° and 20° north, it does not appear, that the Spaniards had ever any knowledge of them. They afford an excellent place of call for their vessels trading between Asia and America, which traverse the Great Equatorial Ocean; and it cannot be supposed, that they would have neglected to form a settlement on islands situated so advantageously for the communication between the two continents. We are indebted for all the particulars we have of these islands to captain Cook and captain King.

VOYAGE ROUND THE WORLD.

See Cook's third Voyage, Vol. II. p. 190 and following, 525 and following, and the beginning of Vol. III.

GREAT NORTHERN OCEAN.

41. The *north-west coast of America*, from Port Monterey, situate about $36^{\circ} 42'$ of north latitude, to the Aleutian Islands.

In 1769 and 1770 the harbour of Monterey, and that of San Diego, which is farther southward, were visited by direction of the Spanish government. Small forts were erected there, and a kind of settlement made, from an apprehension, that some foreign power might extend it's views to coasts, which seemed not to belong to the crown of Spain, though bordering on it's possessions.

The expedition was fitted out by don Joseph de Galvez, *intendant* of the army, and inspector-general of the kingdom of Mexico, by order of the marquis of Santa Cruz, viceroy of the province; and executed by Gaspar de Portola, captain of dragoons, commanding the troops, and don Vicente Villa, pilot of the royal navy, and don Juan Perez, pilot for the Philippine Islands, commanding the packets San Carlos and San Antonio. The journal of this voyage has been printed in Spanish, at the press of the Mexican government.

We are here informed, that the constancy of the north and north-west winds, which prevail to the north of California almost throughout the year, must prove a great impediment to vessels attempting to run down the north-western coast of America.

The country north of the peninsula of California, if we may judge from this account, is sufficiently fertile, and the natives are very tractable.

More than a year was spent by the Spaniards in reaching Port Monterey, though they ought to have known its situation, since it was discovered, in 1602, by general Viscaino, commanding a squadron, sent by Philip III. to discover and explore the coasts to the north of California. After infinite toil, and long search by sea and land, they at length succeeded in rediscovering it, nearly in the parallel pointed out by Viscaino.

According to the observations made by the Spaniards in 1770, the harbour of Monterey lies in the latitude of $36^{\circ} 40' *$, just to the northward of the chain of mountains, or sierra, of Santa Lucia. It is a spacious bay, not much unlike that of Cadiz. The anchoring ground has four, six, or eight fathoms of water, according to the distance from the shore, with a fine sandy bottom, and holds well.

Some years elapsed before the Spaniards thought of pursuing their discoveries to the north. At length their attention was roused by the successive voyages of several English vessels in the great ocean; and, in 1775, don Antonio Maria Bucarelli, viceroy of Mexico, gave orders for an expedition to carry on the examination of the north-western coast of America as far as 65° .

Three small vessels were employed in this expedition, the command of which was entrusted to don Juan de Ayala. The honourable Daines Barrington has translated into English the journal of don Francisco Antonio Maurelle, pilot of the second of the vessels, commanded by don Juan Francisco de la Bodega, and printed it in his *Miscellanies*, London, 1781, 4to. The following account is collected from Mr Barrington's translation.

§ They sailed from the harbour of San Blas† on the 17th of March, 1775. The beginning of their voyage was obstructed by contrary winds: and on the 21st of May, a council of the principal officers of the little squadron

* In the voyage which the Spaniards made to the coast north of California, in 1775, an account of which is given below, they fixed the latitude of Monterey at $36^{\circ} 44'$ north.

† On the coast of New Galicia, a province of Mexico, at the entrance of the Gulf of California.

being held, it was decided, that they should proceed to the latitude of 43° , in preference to putting into Port Monterey. This decision was founded on the hope of finding in that latitude the Entrance of Martin de Aguilar*, discovered in 1603, where they might procure water, and repair their vessels. (Some charts place the mouth of this river in 45°).

On the 7th of June, in the latitude of $41^{\circ} 30'$, though yet at a considerable distance from land, they distinguished a long tract of coast, extending from south-west to north-east: but they were not able to get near it, from the wind's falling calm.

On the 8th they saw the land much more clearly, at nine leagues distance: and the next twenty-four hours the currents to the south increased so as to make a difference of the latitude by reckoning and observation of $29'$.

On the 9th they entered a harbour which they called *Porto de la Trinidad*, situate in the latitude of $41^{\circ} 7'$ by observation, and $19^{\circ} 4'$ west of San Blas.

The Spaniards speak highly in praise of the country and its inhabitants. These Americans paint their bodies with black, or blue†; and have nearly the same customs, and the same arms, as are described in the narrative of Cook's third voyage, when he visited the north-western coast of America.

Mr. Barrington did not see the plan of the harbour: but the journal says it was drawn by don Bruno Heceta, J. F. de la Bodega, and the writer, namely, F. A. Maurelle. It is added, that, though the port is represented in the chart as open, it is to be understood, that it is well sheltered from the

* In the *Considérations géographiques et physiques*, "Physical and geographical Reflections," of Philip Buache, M^r de la Pérouse will find all that is known respecting this Entrance of de Aguilar, and that of Fuca, which is mentioned in this journal.

† Blue should probably be red: for the word in the original appears to be *azarcon*, which signifies red-lead, and which Barrington, not understanding, has placed at the foot of the page. T.

south-west, west, and north-west, as also from the north-north-east and east.

On the western side there is a hill fifty fathoms high, joining to the continent on the north, where there is another rising of twenty; both of which afford protection, not only from the winds, but the attack of an enemy.

At the entrance of the port is a small island of considerable height, without a single plant upon it; and on the sides of the coast are high rocks, which are very convenient for disembarking: goods also may be shipped so near the hill, that a ladder may be used from the land to the vessel; and near the sand are many small rocks, which secure the ship at anchor from the south-east and south-west.

The tides are as regular as in the seas and on the coasts of Europe.

During their stay the Spaniards attempted to ascend a river, which came from the south-west, and which they had seen from the top of the hill. They found the mouth wider than is necessary for the discharge of the water, which is lost in the sands on each side, so that they could not even enter it, except at full tide. However they left their boat, and proceeded a league into the country, while the river continued of the same width; viz. twenty feet, and about five deep.

They gave this river the name of *Rio de las Tortolas* *, because at their first landing they saw large flocks of these, and other birds, some of which had pleasing notes.

On the sides of the mountains, and in the neighbourhood of the harbour of Trinidad, they found some plants and fruits.

* Mr. Barrington translates it Pigeon River.

They sailed on the 19th of June, with a gentle breeze at north-west, from which quarter the wind had blown during the whole time they were in port.

It appears, that one of the officers on board the fleet, don Juan Perez *, had already been employed in discoveries to the north, with which we are unacquainted: for whether he were in the fleet, which may be presumed from some parts of the narrative, or whether the Spaniards had his journal only, his opinion is cited as of considerable weight. He averred, that he had had the wind at south and south-east, which had enabled him to run down the coast without difficulty in high latitudes. His opinion was, that they ought not to get in with the coast before they reached the latitude of 49° ; and don Maurelle, whose account is here abridged, agreed with him.

On the 9th of July, the Spaniards reckoned themselves to be in the latitude of $47^{\circ} 40'$, in which, according to the French charts, though they found these very defective with regard to these parts for the want of authentic materials, lay an entrance, or river, said to have been discovered in 1592 by Juan de Fuca. They observed, that the sea was coloured as in soundings, and they saw numbers of fish, reeds twenty feet long, and a species of sea-weed with a head resembling an orange (we presume the *bonnet flamand* †). Every circumstance induced them to suppose, that they were not far from land.

On the 11th they saw land, distant about twelve leagues; and on the evening of the 12th they were not more than a league from the shore, when they distinguished various headlands, many small islands, and also mountains covered with snow. They likewise saw a barren island, about

* This Juan Perez was no doubt the pilot for the Philippine Islands employed in the expedition undertaken in 1769, at which time the Spaniards did not pursue their researches so far to the north as in 1775. With the expedition of 1769, Mr. Barrington appears to have been unacquainted.

† *Bonnet flamand* is a name we are unacquainted with, but the marine plant in question resembles an orange in size, in form, and in colour, and is called by Linnæus, *alcyonium lyneurium*; by Pallas, *alcyonium aurantium*; and by Donati, *ibetia sphaerica*. T.

half a league in circumference, which they called *de Dolores*. Here they reckoned themselves by estimation in the latitude of $47^{\circ} 39'$, and in the longitude of $21^{\circ} 53'$ west from the meridian of San Blas.

On the 13th they anchored two leagues and half from the land, in 30 fathoms water, to wait for the frigate, which was to leeward. Latitude $47^{\circ} 28'$, longitude $21^{\circ} 34'$ west of San Blas.

In the evening they got under way; and when the vessels joined, they anchored again, in eight fathoms: latitude $47^{\circ} 21'$, longitude $21^{\circ} 19'$ west of the meridian from which they took their departure.

The natives of the country appeared in considerable numbers in canoes, and came on board the Spanish vessels. They bartered the skins which they brought for articles made of copper, and pieces of this métal *, which they asked for by putting their hands on the rudder-irons.

The Spaniards went on shore for wood and water; but the Americans, having planted themselves in ambuscade, wounded several †, while on the part of the natives many were killed.

On the 14th of July the Spaniards departed, the wind continuing to blow from the north and north-west.

August the 1st, a thick fog. They bore away from the coast.

August the 5th, the wind at south-west.

The 13th, the colour of the water changed; they saw many orange-head sea-weeds and birds.

On the 14th and 15th the signs of land increased, when they found

* Barrington says iron. T.

† According to Barrington the whole of the boat's crew were killed. T.

themselves in north latitude $56^{\circ} 8'$, a hundred and fifty-four leagues* west of the continent, and sixty-nine leagues from an island laid down upon their chart, which likewise pointed out an archipelago in the same parallel. Mr. Barrington supposes, that this was the chart of don Juan Perez †, who had already been on a voyage to the north: but we know nothing more of this island, for it is not even said in the journal whether it lay east or west of the vessel. It is very probable, however, that Maurelle intended some island near the peninsula of Alashka, such as the Trinity Island of Cook; and that he considered Alashka and the adjacent islands as constituting an archipelago. This appears to have been the opinion of the Russians, before Cook's discoveries threw light on this part of America.

At noon on the 16th the Spaniards saw land to the north-west, distant six leagues; and it soon afterwards opened to the north-east, presenting considerable headlands and mountains, one of which was of an immense height, being situate on a projecting cape, and of the most regular and beautiful form that Maurelle had ever seen. It was also quite detached from the great ridge of mountains. Its top was covered with snow, under which appeared some wide gullies, which continue down to about the middle of the mountain; and thence to the bottom are trees of the same kind as those at Trinidad, before described to be pines.

The Spaniards named this mountain *San Jacinto*, or St Hyacinth; and the cape, *del Enganno*, or Deceit. They are both in the latitude of $57^{\circ} 2'$ north, according to the journal; and from two repeated observations at a mile's distance, the longitude was found to be $34^{\circ} 12'$ west of San Blas. The author does not say, however, what means he employed for observing the longitude: though he informs us, that the principal points on the coast were fixed in their chart by the situation of this cape. Mr. Barrington,

* Of 17 and half to a degree.

† It would seem, that Juan Perez could have no practical knowledge of the countries and seas of the north; for in the expedition of 1769, in which he was employed, the Spaniards advanced no farther than Port Monterey, in the latitude of $36^{\circ} 40'$ or $44'$.

though he procured a copy of the narrative which he has translated, could not obtain a sight of the chart.

On the 17th the wind blew moderately from the south, by means of which they entered a bay, that was three leagues wide at its mouth, and which was protected on the north* by Cape del Enganno. On the side opposite to this cape they discovered a port more than a league wide at the entrance, perfectly secure from all winds but the south. They nearly approached the sides of this bay, and never found less than fifty fathoms in depth; but they could not perceive any kind of flat or plain, as the mountains come quite down to the shore. Notwithstanding this, they distinguished a small river; to which, however, it being night, they paid no attention, but let go their anchor in sixty-six fathoms, clayey bottom.

This port, situate in latitude $57^{\circ} 11'$, and longitude $34^{\circ} 12'$ west of San Blas, they named *Guadelupe*.

On the 18th they sailed again, with little wind; when two canoes, with four Indians in each, two men and two women, appeared, but did not seem to wish to come on board, making signs, that the Spaniards should go on shore. They continued their course, however, the wind being north-west, till nine in the morning; when they entered another port, not so large indeed, but the adjacent country much more desirable to navigators, as a river of eight or ten feet wide empties itself here, while the harbour is protected from almost every wind, by means of a long ridge of lofty islands, almost joining each other, with anchorage of eighteen fathoms, on a sandy bottom. Here they anchored at a pistol-shot from the land. On the bank of the river they saw a high house, and a parapet of timber supported by stakes driven into the ground, where they observed ten Indian men, beside women and children.

* So it stands, both in Barrington and the French: but it certainly should be south, for the bay is said to be 9' farther north than Cape del Enganno, and the Spaniards reached it with the wind at south. T.

They named this port *de los Remedios* ; and found, that it was situate in north latitude $57^{\circ} 18'$, and longitude $34^{\circ} 12'$ west of San Blas.

Here they planted a cross on the land, cut another on the rock, and performed the ceremony of taking possession, according to their instructions. They then fixed upon a place, to wood and water.

While this was doing, the Americans did not quit their parapet: but as soon as the Spaniards were gone, they came and took away the cross, fixed it on the front of their house in the proper direction, and at the same time made signs with their open arms, that they had thus taken possession of the cross.

On the 19th, the Spaniards having landed to procure wood and water, the Americans immediately appeared on the opposite bank of the river. They were without arms, and displayed a white leaf (*oia*) from a pole. The Spaniards made signs, that they came only for water; on which the chief of the Indians, conceiving that they were very thirsty, advanced into the middle of the river, holding in his hands a cup of water, and some dried fish, which were received by one of the Spaniards, and presented by him to their commander, who sent the Americans in exchange some bugles and small pieces of cloth. The Indians, however, were not to be so satisfied, but insisted on other barter for the water; which the Spaniards refusing, the Indians threatened them with long and large lances pointed with flint, to which they paid no farther attention, than keeping on their guard. When the Indians found, that their visitors had no design to attack them, they withdrew: as did the Spaniards, when they had procured water, and the wood they wanted.

The mouth of the river abounds with fish: the country is covered with pines, as at the harbour of Trinidad: the inhabitants are clothed in the same manner, wearing likewise over their hair a cap, which covers the whole head. These Indians appear, from different circumstances, to possess a certain degree of civilisation.

The Spaniards found the weather excessively cold, with much rain, and fogs, and did not see the sun during the three days they staid here.

On the 21st they sailed, with the wind at south-east, steering north-west.

Their latitude on the 22d, by observation, at noon, was $57^{\circ} 18'$; and they ran along the coast as far as 58° , without making any discovery; whence they concluded, that none of the supposed straits or entrances here existed. Sickness had prevailed for some time among the crew; and as it's fatal effects increased daily, they deemed it impracticable to pursue their search to a higher latitude. Accordingly they desisted, and steered their course south-east.

On the 24th, being in latitude $57^{\circ} 17'$, they doubled a cape, and entered into a large bay, discovering to the north an arm of the sea, where the temperature was very unpleasant from cold, but the sea perfectly smooth, being sheltered from the wind. The anchorage in this arm of the sea is very good; fresh water in abundance, from rills and pools; and plenty of fish. Being becalmed, the schooner rowed till she reached the entrance, where she anchored in twenty fathoms water, soft muddy bottom. This place was named *Porto Bucarelli*, from the viceroy of Mexico. Here they experienced a pleasant temperature, which they ascribed to some volcanoes, the light of which they perceived in the night, though at a considerable distance.

The Spaniards took possession of the country in the name of his catholic majesty, and laid in wood and water here. From a hut, some paths, and other signs, they presumed the country to be inhabited, though they saw no person.

From two observations, made on different days, they found the latitude of Port Bucarelli to be $55^{\circ} 17'$, and longitude $32^{\circ} 9'$ west of San Blas.

The mountains near this port are covered with trees of the same kinds as those seen on the less northern parts of the coast.

At the distance of six leagues to the south, they perceived an island of a moderate height, which they named the Island of *San Carlos*: and on the 29th they sailed with a gentle breeze at north, but which fell calm at noon, when they were opposite to a bare island, which scarcely appeared above the sea, and to the east and west of which were many rocks. Here they anchored in twenty-two fathoms, about two leagues distant from the Island of San Carlos.

In this situation they observed a cape, at the distance of four or five leagues, which they named *Cape St. Augustin*; after which the coast trended so much to the east, that they lost sight of it. They found also, that there were here such violent currents in opposite directions, that they could not sound: and as these currents appeared to follow the direction of the tide, and to depend on it, they concluded, that the opening which they perceived into the land might be a river, or that at least this entrance communicated only with the Great Northern Ocean*.

Cape St Augustin is nearly in 55° north latitude: and as the season was not yet advanced, the zeal of the Spaniards revived, so that, in order to fulfil the intentions of his catholic majesty, expressed in their instructions, they resolved to attempt once more to resume their course to the north.

On the 28th the wind was variable, obliging them to approach the coast at $55^{\circ} 50'$, when in the evening it fixed to the south-west, according to their wishes.

On the 29th and 30th the wind was south, though often veering to the

* In Barrington's translation no mention is made of a river: on the contrary, his words are: "as these currents rose and fell with the tide, it should seem that this inlet hath no communication but with the sea." *Miscellanies*, p. 510. T.

south-west, with occasional squalls and tornadoes, accompanied by high seas till the 1st of September. In this interval they were carried to the latitude of $56^{\circ} 50'$.

At the beginning of September the wind was variable, but on the 6th it fixed in the south-west, blowing quite a storm.

On the 7th the wind abated, and on the morning of the 8th it came round to the north-west, when they endeavoured to get in with the coast, in latitude 55° , finding themselves, since the storm, with only one seaman who could stand to the helm, while the captain, or Maurelle, attended the sails. They now gave up all thoughts of pursuing their discoveries to the north.

On the 11th they saw land, at the distance of eight or nine leagues, in latitude $53^{\circ} 54'$; but as they wished not to approach so near as to be unable to leave it, they kept at a proper distance, having it in view, however, from day to day, but not examining it's capes, bays, and ports. It was not till they had reached the latitude of $47^{\circ} 3'$, when they were not farther distant than a mile, that they attended to all proper particulars, so as to lay them down on their chart.

On the 20th they were within half a league of the coast, precisely at the same point as on the 13th of July; but they found a difference of 17 Spanish leagues between their longitudes, estimated at the two periods.

On the 22d they steered their course for Monterey, with the wind at north-west.

On the 24th they saw land in the latitude of $45^{\circ} 27'$, and sailed along the coast, about a cannon-shot distant from it. During the night they lay to, reckoning themselves to be in the supposed latitude of the entrance of Martin de Aguilar, the existence and situation of which they wished to verify. They continued their search to the parallel of $45^{\circ} 50'$, when they discovered a cape, exactly resembling a round table, in the longitude of $20^{\circ} 4'$

west of San Blas, from which the coast trends to the south-west. This cape they named *Cape Mezari* *. They saw here ten small islands, and some others scarcely above the surface of the sea. As they could see nothing of Martin de Aguilar's river in this second trial, they concluded, that it was not to be found. The writer of the journal admits, however, that de Aguilar assigned the latitude of 43° to its entrance: but he observes, that the instruments used by that navigator in 1603 must have been very defective, and consequently no dependence could be placed on his latitude. It may be conjectured, he adds, that de Aguilar gave the latitude too far north, and that we might have found it in 42° , or less: but of this there can be little expectation, since we examined all that part of the coast, except about 50 minutes of latitude.

On their way to Monterey, they endeavoured to make for the Port of San Francisco, which having discovered in $38^{\circ} 18'$, they entered a bay, sufficiently sheltered from the north and south-west, where they distinguished the mouth of a considerable river, and some way up a large port, exactly resembling a dock. They concluded this to be the harbour of San Francisco, of which they were in search, as the History of California places it in $38^{\circ} 4'$. The sea ran too high to allow them to enter this port: but as they neither saw any inhabitants, nor the small islands which are said to be opposite to it, they began to doubt, whether this were in reality the harbour of San Francisco. In this state of suspense, they cast anchor near the northernmost of the points, or capes, which form the entrance of the port, and gave it the name of *Punta de Arenas*, or Sandy Point.

A vast number of Indians now appeared at both points, and passed from one to the other in small canoes. Two of the canoes at length came alongside the ship, and presented the Spaniards with plumes and garlands of feathers, and a canister of seeds, which tasted very much like walnuts. Bugles, looking-glasses, and pieces of cloth, were given them in exchange.

* I do not see this name in Barrington. T.

These Indians are large and strong, and of the same complexion as those of the whole coast. Their disposition is most liberal, as they seemed to expect no return for what they gave: a circumstance not experienced among those to the northward.

The state of their sick prevented them from staying to examine and take the soundings of this port: but, not being able to persuade themselves that it was San Francisco, they named it *de la Bodega*.

There can be no doubt, that this was the same harbour as Drake discovered on the 17th of June, 1579, the latitude of which he lays down in $38^{\circ} 30'$. His account of the inhabitants agrees with the recent report of the Spaniards. These fix the latitude of *de la Bodega* in $38^{\circ} 18'$, and it's longitude in $18^{\circ} 4'$ west of San Blas. The latitude given by sir Francis Drake differs from that of the Spaniards but $12'$: and this may be considered, for the time when he made the observation, and the instruments he employed, as very exact. Mr. Barrington very justly reproaches the Spaniards, for their unwillingness to allow this harbour to retain the name of the "brave heretic," who first discovered the north-western coast of America, of which he took possession for the English crown by the name of New Albion.

On the 4th of October, the Spaniards quitted the Harbour of Sir Francis Drake, at the first flow of the tide, when, it's direction being contrary to that of the current of the river, the sea ran so high, that it broke all over the schooner, and stove her boat to pieces along side.

There is not sufficient depth of water at the mouth of this harbour, for a vessel at anchor to resist the violence of the surge, when the tide and current meet. The writer of the journal says, if they had been apprized of this circumstance, they would either have continued where they were first at anchor, or sailed farther from the mouth of the harbour. In all parts where they had an opportunity of sounding, the bottom was nearly of the same depth. Don Maurelle says, that it is very easy to enter the port with

the prevailing wind of north-west: but he thinks, that in leaving it, with the wind in this quarter, it is necessary to get farther out to sea from the points; a precaution not necessary, when the wind blows from the south-west, east, or south.

The mountains near this port are entirely naked; but those more inland were covered with trees. The plains had a good verdure, and seemed to invite cultivation. Drake's account says, that he named this country New Albion for two reasons: the first, because, from the nature of the banks, and white cliffs, which skirt the coast, it offers the same appearance to the eye as England: the second, because it was just and reasonable, that the land should bear the name of his country, who first landed upon it.

The Spaniards, as was observed above, quitted Drake's Harbour on the 4th of October; and having doubled the cape which they named *del Cordon*, forming with Cape de las Arenas the entrance of the port, they steered a south-south-west course, with a moderate wind at west, in order to reach a cape, which appeared to the south, at the distance of about five leagues.

On the 5th they sailed near some small islands, lying to the west, and opposite the harbour they had just left.

On the 7th they anchored in Port Monterey, in three fathoms, sandy bottom. They fixed the latitude of it at $36^{\circ} 44'$ *, and the longitude at 17° west of San Blas.

On the 1st of November they quitted this port: of which they did not lose sight, however, till the 4th at noon, when the wind became favourable, blowing from the north-west; and they continued steering south till the 13th, when they approached the coast of California, and kept along it as far as Cape San Lucar, which they doubled on the 16th, at six in the evening.

* The pilots employed in the expedition of 1769—70 gave the latitude $36^{\circ} 40'$.

They supposed this cape to be in latitude $22^{\circ} 49'$, and longitude west of San Blas 5° .

On the 16th they saw the three Islands of María; and on the 20th they re-entered the Port of San Blas, from which they had sailed two hundred and sixty days before.

For tracing the north-western coast of America, on the chart of the Great Northern Ocean delivered to M^r de la Pérouse, the geographical positions laid down by the Spaniards have been followed, in the parts examined by them, and not visited by captain Cook; taking them in connexion with those of captain Cook, which have served to adjust their situations. To the chart of the Great Equatorial Ocean have been added separate charts of certain coasts, and plans of harbours and bays, differing in some points from those of the same parts given with the narrative of Cook's third Voyage. M^r de la Pérouse may have an opportunity of ascertaining which of the plans has been delineated with the greater accuracy. It is not yet a matter of certainty, whether that portion of America, which stretches out in a point to the south-west, be an island, or a peninsula. The Russian charts, that of Stählin in particular*, represent all the land comprised under the name of Alaschka as one large island, separated from the continent by a channel forty leagues wide, with several smaller islands to the north and north-east of Alaschka. Captain Cook has examined this coast sufficiently near, in the parts which he explored, to satisfy himself, that it was not intersected by channels, and that the continent continues uninterrupted; at least to the vicinity of the Island of Shumagin. But he suspected, that there might be a strait to the north-north-west of the Island of Hatibut, separating the peninsula of Alaschka from another tract of land to the south-west, which is laid down in the chart by the name of the Island of Oonemak.

M^r de-la Pérouse is referred to Cook's third Voyage, Vol. II. p. 403 and

* An Account of the new Northern Archipelago, lately discovered by the Russians, in the Seas of Kamtschatka and Anadir, &c.; London, 8vo. 1774.

488, and to the annexed charts, as well as to those which form a part of the manuscript collection delivered to him.

42. The *Aleutian or Fox Islands*, and others supposed to be situate to the west, west-south-west, and west-north-west of these.

Captain Cook visited the Islands of Oonalashka only, which constitute a part of the Fox Islands, and the strait between these islands, with some of the harbours belonging to them. With regard to the other islands of this group, and those of other groups more to the west, we know nothing of them but from the accounts of the Russians, which are too inaccurate to deserve any confidence. M^r de la Pérouse will consider them as nothing more than a vocabulary, and examine these islands with the same caution, as if they were absolutely unknown. He will find all these accounts collected in Coxe's work entitled Discoveries of the Russians, and in the chart annexed to it, which exhibits a view of all the discoveries made by this nation to the east of Kamtschatka. See p. 164—297 of the original, and p. 149—194 of the French translation.

43. The *Port of Avatscha*, or of *St. Peter and St. Paul*, at the point of the peninsula of Kamtschatka.

The collection of manuscript charts delivered to M^r de la Pérouse contains a separate plan of this harbour, on a large scale, different from that to be found in Cook's third Voyage, to which he is referred for such nautical details, and other particulars, as may be of utility to him when he puts into this port.

See Cook's third Voyage, Vol. III. p. 183 and following, p. 284 and following.

44. The *Kurile Islands*.

Captain Gore, who succeeded captains Cook and Clerke in the com-

mand, towards the end of the third voyage made by the English in the Great Northern Ocean, explored none of the Kuriles, which he passed by, running along the eastern coast.

If we may believe Muller *, Yeso, or Jeso, appears to be the name given by the Japanese to all the islands, which the Russians call the *Kurilski*, or Kuriles. The first and northernmost of these islands is a very little way from the southern point of Kamtschatka †: a boat will row from one to the other in two or three hours. It is to be presumed, from these accounts, that the islands nearest to Kamtschatka are alone tributary to Russia, and that those farther south are independent of the empress. Muller describes all these islands as follows, beginning with the northernmost.

1. *Schumtschu*.
2. *Purumuschu*, two or three hours' sail from the first.
3. *Muschu* or *Oukutan*, half a day's sail from the second.
4. *Ujachkupa*, to the west of the preceding three, and at some distance from the first.
5. *Sirinki*, opposite the strait which separates the second and third.
6. *Kukumiwa*, a small uninhabited island, to the south-west of the fifth.
7. *Araumakutan*, a volcano, uninhabited.
8. *Siaskutan*, very thinly peopled, but the inhabitants of the neighbouring islands meet in it to trade.

* *Voyages et Découvertes des Russes*, "Voyages and Discoveries of the Russians."

† Called the Point of Lopatka.

VOYAGE ROUND THE WORLD.

9. *Ikárma*, a small, desert island, on the west of the eighth.
10. *Maschautsch*, a small, desert island, south-west from the ninth.
11. *Igaitu*, a small, desert island, to the south-east of the eighth.
12. *Schokoki*, a day's sail from Ikarma.
13. *Motogo*, a small island to the south.
14. *Schaschowa*,
15. *Uschischir*,
16. *Kitui*,
17. *Schimuschir*, inhabited.
18. *Tschirpui*, remarkable for a lofty mountain.
19. *Iturpu*, a large island, well peopled, covered with extensive forests. We found on it bears, and different kinds of animals. It affords many anchoring places, and rivers capable of admitting ships. The inhabitants of this island are believed to be independent of Russia, and to acknowledge no sovereignty.
20. *Urup*. Muller says he is assured, that the inhabitants of this island are independent.
21. *Kunaschir*. This island is the largest of all that have been mentioned, and it's population numerous.
22. *Matmai*, or *Matsumai*, the last and largest of the whole. The capital town, bearing also the name of Matmai, is seated on the sea-shore,

in the south-west. It was built by the Japanese, by whom it is inhabited; is a fortified place, provided with artillery, and defended by a numerous garrison. The Island of Matmai is a place of exile for persons of distinction, who have fallen into disgrace at Japan: from which empire it is separated only by a channel of no great width, which is considered as dangerous, because the navigation is rendered difficult by the capes that project on either side.

The English, in Cook's third voyage, examined only the first and second of the Kuriles: but they collected some interesting details relative to these islands in general, and to some of them in particular, from the pastor of Paratounga. It appears, that the dominion of Russia extends no farther than the island of Uschischir, set down as the fifteenth, and that all the following are independent. The inhabitants of these islands are reputed to be by no means insensible to acts of friendship, and to be hospitable, generous, and humane. See Cook's third Voyage, Vol. III. p. 378.

Consult also the *Considérations géographiques et physiques* of Ph. Buache, p. 55, &c.

45. The *land of Yezo or Jesso*. It has been observed in the preceding note, that the Japanese confound this country with the Kurile Islands: but it is generally supposed, that it ought to be distinguished from them. Cook's voyage has procured us no information in this respect: it even appears, that, for making out the general chart of his voyage in this part, nothing more has been done, than to copy the common maps.

For this land, the different accounts collected by Philip Buache, and inserted in his *Considérations géographiques et physiques*, p. 75 and following, may be consulted. See too the charts belonging to that work, and a series of views taken by the Dutch, when they explored part of this land in 1643.

To the collection delivered to M^r de la Pérouse has been added a copy

of the chart made out by the Dutch, which exhibits all the particulars of their discoveries.

46. *Eastern coast of Japan.* A chart of a small portion of this coast, and the nautical observations relative to it, are to be found in Cook's third Voyage; see vol. III. p. 397 and following. See likewise the chart in the collection delivered to M^r de la Pérouse.

47. *The Islands of Lekeyo,* to the south-west of Japan. Philip Buache, in his *Considérations géographiques et physiques*, p. 130, has given extracts of all the letters, which the missionaries have written concerning these islands, respecting which we have yet little information, on which any dependence can be placed. See also the *Lettres édifiantes*, "Instructive Letters."

48. *A large island,* populous and wealthy, said to have been discovered by the Spaniards about the year 1600.

Respecting this island the following note will be found in the *Philosophical Transactions*, N^o 109, p. 201, paragraph 11, end of volume VII, VIII, IX, for 1674.

"In the South Sea, at the $57\frac{1}{2}^{\circ}$ northern latitude, and about 400 Spanish, or 343 Dutch, miles, that is, 28° longitude east of Japan, there lies a very great and high island, inhabited by a white, handsome, kind and civilised people, exceeding opulent in gold and silver, as had been experimented many years since by a Spanish ship sailing from the Manilles to New Spain; insomuch that the king of Spain, in the year 1610 or 1611, for further discovery, and to take possession of the same, set out a ship from Acapulco to Japan, which by ill conduct proved successful: since which time the prosecution of that discovery has been neglected."

SUPPLEMENT.

49. The *Carolina Islands*. A separate chart of these islands has been constructed from that of father Cantova, and the accounts of other missionaries, an abstract of which has been collected, and printed by way of supplement, in the *Histoire des Navigations aux Terres Australes* of the president de Brosses, vol. II. p. 443 and following.

50. An island to the southward, *between Mindanao and the Moluccas*. For all these parts see captain Forster's Voyage to New Guinea.

M^r de la Pérouse will find, in the collection put into his hands, a separate chart of the straits between the Island of Waygew and New Guinea, and a chart of the western part of New Guinea, with the Aroo Islands, and part of the Island of Ceram.

These charts may be useful, if contrary winds should oblige him to run through these straits. M^r de la Pérouse may consult likewise a chart, to be found in the *Histoire des Navigations aux Terres Australes*, vol. II. p. 310, under the title of a Chart of the Papua Islands, copied from the original of M^r Isaac Tirion, a Dutchman. Every thing in it respecting these parts agrees with what captain Forster has more recently published.

51. *Straits to the east and west of the Island of Timor*. In the account of Dampier's voyages M^r de la Pérouse will find instructions, that may assist him in directing the course of his ships through which ever of these straits circumstances and the wind may induce him to prefer.

The collection delivered to him contains separate plans of several of these passages, as the straits of Allass, Lomboc, Solor, Sapy, and others, between the southern islands of the Asiatic archipelago, little frequented by European navigators.

Mr de la Pérouse will observe, that the southern and eastern parts of the Island of Sumbava, or Combava, have never yet been explored.

52. For the *Isle of France* and the *Cape of Good Hope*, he is referred to the *Neptune Oriental* of Mr Dapprès, and the Instructions annexed to it.

53. The *Islands of Marseveen and Denia*.

These are two small islands, known to the Dutch, to which they are said to send for wood, yet of which the position is not determined. Captain Cook regrets, that he had it not in his power to search for these islands: second Voyage, vol. II. p. 244 and 246. In the chart of the Southern Ocean they are laid down conformably to the situation allotted them in the general chart to Cook's third Voyage, that is to say, Marseveen, the more northern of the two, in $40^{\circ} 30'$ south latitude, and $2^{\circ} 45'$ east of the meridian of the Cape of Good Hope, Denia, in the latitude of 41° , and longitude 3° east of the Cape: but it is to be observed, that on Halley's variation chart they are placed in the latitude of $41^{\circ} 30'$, and about 4° east from the meridian of the Cape.

54. *Cape, or Island, of Circumcision*, discovered on the 1st of January, 1739, by Mr de Lozier-Bouvet.

This navigator sailed from the Island of Santa Catarina, on the coast of Brasil. The chart he used was that of Peter Gooz, which places this island in the longitude of 333° from the meridian of Teneriffe, corresponding to 46° west from the meridian of Paris. The calculation of his course from the Island of Santa Catarina to Cape Circumcision gives $53^{\circ} 45'$ difference of longitude east; whence he concluded the longitude of this cape to be 26° or 27° east from Teneriffe, that is 7° or 8° east from Paris.

But the longitude of the place, from which Mr Bouvet took his departure, was laid down in the chart he used 4° too far east: for the longitude of Santa Catarina, corrected by those which recent observations have assigned

to Rio Janeiro and Buenos Ayres, must be 329° from the meridian of Teneriffe, instead of 333° , or 50° west of Paris, instead of 46° . Now, if 50° west, the longitude of Santa Catarina, be subtracted from $53^{\circ} 45'$, the easting made by M^r Bouvet, there will remain $3^{\circ} 45'$ east for the longitude of Cape Circumcision, instead of 7° or 8° , which Bouvet had allotted it; and which indeed he could not avoid giving it from the chart of Peter Goosz, which carried the Island of Santa Catarina, or the meridian of departure, 4° too far east.

M^r le Monnier, of the Academy of Sciences, has attempted to determine the longitude of Cape Circumcision from the theory of the variation of the needle; and he places it between 1° and 2° east of Paris. See his *Dissertation* in answer to M^r Wales, printed at the end of the first volume of the French translation of Cook's third Voyage.

But as differences of meridian deduced from the variation of the needle can be nothing more than approximations, liable to considerable uncertainty, it has been thought most advisable, to adopt the difference of meridian resulting from the calculation of M^r Bouvet's course from the Island of Santa Catarina to Cape Circumcision, without presuming, however, that this navigator's reckoning was altogether exempt from errors. Accordingly, in the chart of the Southern Ocean, this cape has been placed $3^{\circ} 45'$ east of Paris.

From this situation, founded on the reasons above assigned, we shall no longer be surprised, that, if the Cape, or Island, of Circumcision exist, as there is every reason to presume, it escaped the search both of captain Cook and captain Furneaux; as the former, coming from the west, did not get into the latitude of this Cape, which is in 54° south, till about 8° east of Greenwich, or $5^{\circ} 41'$ east of Paris; and the latter got into this parallel $10^{\circ} 30'$ east from Greenwich, or about 8° from Paris: thus both of them must have passed it, before they reached it's latitude.

LETTER

FROM THE MARSHAL DE CASTRIES TO M^r DE CONDORCET, PERPETUAL SECRETARY TO THE ACADEMY OF SCIENCES.

VERSAILLES, MARCH, 1795.

SIR,

THE king having resolved to dispatch two of his frigates on a voyage, which may accomplish objects of advantage to his service, and at the same time be the means of extensive improvement in the knowledge and description of the terraqueous globe, it were to be wished that the Academy of Sciences would take the trouble of drawing up a memoir, exhibiting in detail the various physical, astronomical, geographical, and other observations, which it may deem most convenient and important to be made, both at sea, during the course of the voyage, and on the islands, or lands, that may be visited. To guide the views of the academy with regard to the plan it may adopt, I must inform you, sir, that his majesty's ships will have to penetrate as far as the 60th degree of latitude, both north and south, and that they will traverse in longitude the whole circumference of the globe. The academy, therefore, may comprise in its speculations nearly all the islands and coasts that are known, and all the surface of the sea, in either hemisphere, included between the two grand masses of land which form the continents.

While thus inviting the academy to engage in a labour, which will afford his majesty much satisfaction, you may assure it, sir, that the greatest attention will be paid to the observations and experiments it may point out; and that no endeavours will be wanting completely to fulfil its desires, as far as the circumstances of the voyage will permit. His majesty

will reflect with pleasure, that, the united erudition of the Academy of Sciences concurring with the love of glory and the zeal that animates his naval officers, he may promise himself the most ample harvest, for the advancement of the sciences, from an expedition, the principal object of which is to promote their progress.

MEMOIR

DRAWN UP BY THE ACADEMY OF SCIENCES, FOR THE
ASTRONOMERS AND OTHERS EMBARKED UNDER THE
COMMAND OF M^r DE LA PÉROUSE.

THE marshal de Castries having required of the academy, on the part of the king, a memoir, pointing out such observations as it may deem of most importance to be made, in the voyage round the world undertaken for the improvement of science, the academy has directed each of the first pensioners of its different classes, to collect the papers furnished by the members of his respective class : these papers it has appointed a committee of four to revise : and it now hastens to lay the general result before the minister, as a proof of its desire to co-operate by its care and zeal, in the execution of an enterprise, the success of which will redound to the glory of the king and the nation, and the advancement of science.

For the sake of order and perspicuity, the academy has thought it advisable, first to bring together in one point of view observations relative to different sciences, which are allied by the nature of their object, though cultivated by different classes. Such are the observations which concern those branches of knowledge, on which the classes of geometry, astronomy, and mechanics, are occupied. These observations more naturally claim a place at the head of this memoir, because they are connected with cosmography, and thus have a more immediate relation to the principal object of the voyage.

GEOMETRY, ASTRONOMY, MECHANICS.

One of the most interesting inquiries, which navigators can have an opportunity of making, is that which relates to the determination of the length of the pendulum in different latitudes. The inductions hitherto drawn from this instrument, for determining the difference of gravitation, have been founded on experiments few in number, made by different persons, and with different instruments : and this want of uniformity in the operations must have some influence on the certainty of the consequences deduced from a comparison of the results. The value of a series of observations of this kind, made with care, by the same persons, with the same instruments, is sufficiently obvious : and the academy cannot too urgently request the navigators, to pursue this object with all possible precision, in every place at which they may stop.

The determination of longitudes will be of course one of the principal points, to which the navigators will attend : but, that the greater advantage may accrue from their researches, with respect to this subject, the academy recommends it to them, to preserve their original calculations of the longitude from the distances observed between the moon and stars ; as thereby, if any astronomer should hereafter correct, by fresh observations made on shore, the elements they may employ for determining the longitude in question, this correction may be applied to the rectification of such longitude.

The navigators provided with Ephemerides, will know before hand the time of the different eclipses, which will occur during the course of their voyage, as well as the places where they will be visible. The academy wishes, that they would not content themselves with barely noting the instant of the commencement and of the end of these eclipses, but that they would point out the situation of the horns, and that in the minutest detail.

The phenomena of the tides are so closely connected with navigation, that they cannot fail to engage the attention of navigators. They will observe, in particular, the double tide of each day with great care. The

academy thinks it not unnecessary to remind them, that we have yet no exact observations of the tides on the western coast of Africa, on that of America, and at the Molucca and Philippine Islands.

As to the geographical observations, they will be guided by the plan traced out to the navigators by his majesty.

The academy will only add here a copy of some remarks on this subject, communicated to it by M^r Buache, it's associate in the class of geography.

NATURAL PHILOSOPHY.

Among the great number of phenomena, which the study of natural philosophy embraces, it is of importance, that the navigators should particularly bend their attention to those, which are subjected to the operation of a regular cause, but the intensity of which is subject to variations, according to places and circumstances, which a series of reiterated observations alone can determine.

Of this kind is the variation of the compass.

As the noting of the variation of the needle constitutes an essential part of the means which will be employed by the navigators for their guidance, the academy confines itself, on this head, to recommending to them when they shall make any stay on shore, to observe the diurnal variations of the needle, by means of the accurate instruments with which they will be furnished for the purpose.

It has been ascertained, by observations made at first at Brest, Cadiz, Teneriffe, and Goree on the coast of Africa, and afterwards at Brest and Guadeloupe, that the intensity of the magnetic power of the needle is sensibly the same at these different places. The academy wishes, that the navigators would repeat these observations in a greater extent of country,

estimating the magnetic power by the duration of the oscillations of a good dipping-needle. The observations in question cannot be made with any great accuracy, unless on shore, or in a roadstead: yet it would be well, to make trials also at sea, in very calm weather, when perhaps they may obtain results of sufficient exactness. It would be particularly interesting to examine the intensity of the magnetic power in those points where the dip is the greatest, and where it is the least.

The academy likewise recommends to the navigators, to observe, with great care, the dip of the needle, at every port in which they may anchor, and even at sea, when the weather will permit them. In the latter case, it will be proper to note the uncertainty of the observation, and point out nearly its degree of precision.

It also invites the navigators, to keep an accurate register of the height of the barometer, in the vicinity of the equator, at different hours of the day; with a view to the discovery, if possible, of the quantity of the variation of this instrument owing to the influence of the sun and of the moon; this variation being there at its *maximum*, while the variations owing to the ordinary causes are at their *minimum*. It is unnecessary to remark, that these delicate observations should be made on shore, and with the greatest precaution. The navigators may ascertain likewise, whether it be true, as some have imagined they have observed, that the mercury in the barometer is an inch higher on the western coast of America, than on the eastern.

The state of the atmosphere, and its continual variations, the observation of which is an object of prime necessity in a sea voyage, offer to the navigators a field of meteorological inquiries, interesting on account of the directions of the higher winds compared with those near the surface of the sea, to which they are not unfrequently opposite.

The academy, being informed that the navigators will carry with them a certain number of small aërostatical balloons, invites them to make use of them, for the purpose of ascertaining the height, at which the winds blowing in the inferior portion of the atmosphere change their course, and the

directions of their different currents. These observations are particularly important in the places where the trade-winds prevail, the relation of which to the winds in the superior region of the air it would be curious to examine.

The fluid on which our navigators sail will also attract their attention, by the different currents it offers to their notice. The academy could wish, that, on their return, they would transmit to it a summary of the important labours they will have undertaken, to determine these currents in the higher parts of the globe, from a comparison of the course given by their reckoning with that deduced from observation, both in latitude and longitude.

Beside those phenomena which occur in the ordinary course of nature, the navigators may have opportunities of observing some that exhibit themselves only at intervals, such as certain meteors, and among others the *aurora borealis* or *australis*. The academy would wish them to observe the altitudes and amplitudes of these *auroræ*.

The cause that produces waterspouts is a matter of dispute: some attribute them to electricity; others consider them as the effect of a whirling motion contracted by a body of air *. The navigators will be very attentive to observe all the circumstances, that can lead to an explanation of this singular phenomenon.

The navigators will not want opportunities of making a great number of interesting experiments on the different degrees of temperature of the sea, and its saltness, in different parts, and at different depths, the specific gravity of its water, its different degrees of bitterness, in proportion to the distance or proximity of the land, &c.

* On the latter hypothesis, the centrifugal force of the molecules of air at a distance from the axis of rotation must diminish the pressure of those which are near the axis, oblige them to let go the water they hold in solution, and occasion a cloud, the form of which will be nearly that of a revolving solid, and the drops of which will be quickly dispersed by the effect of the centrifugal force. The pressure of the air of the atmosphere not being diminished in the direction of the axis of rotation, the air must be perpetually renewing itself, by arriving at each extremity of the axis; and, from the diminution of the pressure, it must keep up a continual precipitation of water in the interior part, which will last as long as the duration of the whirling movement, and the quantity of which will depend on the velocity of this movement, and the body of air affected by it.

VOYAGE ROUND THE WORLD.

The academy trusts, that they will not neglect to compare the temperature of the sea at a certain depth with that of the water at it's surface.

It is to be wished, too, that the navigators would avail themselves of all the pits and excavations that may offer, to observe their temperature, as well as that of springs, and deep wells.

Sailors have distinguished the flat ice, which covers certain parts of the sea, from those thick masses which appear distinct, and resemble floating mountains. The academy wishes, that a regular attention to the circumstances, that respect these two kinds of ice, may give room for some conjectures relative to their formation.

The light, which sometimes shines on the surface of the sea, has been ascribed to the presence of a multitude of little luminous animals: but as this light appears in all places, where the sea is thrown into commotion, it would be curious to examine this phenomenon more minutely, if it be possible, than has hitherto been done, in order to discover, whether the light in question be not owing to some other cause.

CHEMISTRY.

Whether the air be more pure, or contain more vital air, at the surface of a considerable extent of sea, as Mr Ingenhousz thinks he has observed on the sea which washes the shores of England, is a question, the solution of which would throw some light on the theory of gasses: and if the opinion of Mr Ingenhousz should be verified by experience, it would be proper to ascertain, whether the case be the same on the open sea as on the coast, the surface of which is frequently covered with quantities of sea-weed.

It appears to be an unquestionable fact, that the sedative salt is found native in the water of some lakes, as in that of Monte Rotondo in Italy. This circumstance perhaps is not peculiar to that lake; and it may form a subject

of inquiry for the navigators, if they should visit the interior parts of any country, on which they may land.

They may likewise happen to find mineral alkali: and, if so, an examination of the substances with which this alkali may be mixed, it's distance from the sea, and other circumstances of this kind, may furnish them with some conjectures respecting the process employed by nature for effecting the alkalisation of sea-salt.

In fine, the navigators, attentive to every inquiry capable of enlightening the chemist with regard to the processes he applies to the service of the arts, may observe, in the countries they visit, the colours employed there for dyeing stuffs, the substances from which these colours are extracted, and the means that have been devised for their application.

ANATOMY.

The curiosity and attention of those, who have undertaken extensive voyages, have naturally been drawn to the different varieties of the human species. Most of them have contented themselves with observing and describing the external characters, which are taken from the colour, stature, make, and other differences of a similar kind, capable of being easily caught, even by common eyes.

It is to be wished, that this comparison could be extended to the internal parts, by anatomical investigation. With this view the bones of the head, and os hyoides, of a well-made skeleton, in those nations which appear to differ in a sensible degree from those of the temperate regions of Europe, either in the form of the visage, or of the whole head, should be procured. We may thus acquire a knowledge of the varieties that occur in man, with regard to the formation of the bones of the head.

For the acquisition of still more interesting information on this subject, the bodily proportions of men of different nations may be compared with those adopted by artists for the representation of nature in it's most beautiful form, by dividing the height of the body into eight parts. The height, likewise, should be taken in a straight line, from the bottom of the heel to the crown of the head.

The dimensions, which it is proper to measure with the greatest care, will be, the distance between the extremities of the fingers when the arms are extended, the length from the armpit to the extremity of the middle finger, the circumference of the head round the forehead, that of the thorax round the breast, and that of the abdomen at the navel.

Anatomists have found, that the number of the lumbar vertebræ sometimes varies from five to six. In countries where the natives are of tall stature, it should be examined, whether they have six lumbar vertebræ.

To this information should be added, as far as is practicable, a knowledge of the usual terms of life, and the age of puberty in each sex.

ZOOLOGY.

In the present state of the science, zoology offers to the navigators a very interesting field of inquiry, on account of the advantages that may be derived to the progress of comparative anatomy from their discoveries. But this object cannot be accomplished with success, unless their descriptions refer to some common method: the academy recommends to them, therefore, to adopt the method followed in *l' Histoire naturelle générale et particulière*, "Natural History, general and particular," as exhibiting the greatest collection of descriptions, of this kind, ever yet made on one plan.

In the description of the new species of birds that may occur, Brisson's Ornithology may be taken as a model.

The prevailing taste for rare shells has rendered most navigators more attentive, in their researches on this head, to what would gratify the curiosity of amateurs, than to what might furnish new lights to the learned. The most important objects are, to examine all the shells, particularly the prevailing species, of a given coast, and likewise the structure of the animals included in them: and at the same time to compare, as far as is practicable, the petrified shells of different parts with the living shell-fish of the neighbouring seas; and to examine whether our fossile shells in Europe have their counterparts living in distant seas, as already has appeared to be the case with some of them.

MINERALOGY.

A vast and fertile field of observation lies open to the navigators in the science of mineralogy. Observations here will be particularly valuable, when they are connected one with another, and serve mutually to elucidate each other from this connexion. Thus, the examination of the substances, which form the two corresponding coasts of a strait; or of those which compose on the one hand the soil of an island, and on the other the continent which it faces; may give room for conjecturing, whether a shore be of ancient or modern formation, whether an island be near the mouth of a river, or whether it have made part of the continent.

It will be of use to inquire, likewise, in every island of any extent, or in such parts of the continent as may be examined in detail, at what height above the level of the sea marine depositions are found in horizontal strata.

It has been suspected, that mountains composed of horizontal calcareous strata diminish in height in proportion as they approach the equator, and that, under the equator, mountains thus formed of horizontal strata would scarcely rise above the level of the sea. It would be of importance to ascertain this fact.

The aspects of mountains in general, more especially in those places where their sides, perpendicularly abrupt, exhibit the most perspicuous marks of their structure; the composition of the granite rocks, which may form the nucleus of many of these mountains; volcanic productions, particularly basaltes, &c.; are objects of inquiry, which cannot escape the attention of enlightened navigators.

Crystallisations are objects so attractive in the eyes of the naturalist, that it must be wholly unnecessary, to recommend to the voyagers to collect as many as possible. The academy would only remind them, to pay particular attention to certain varieties wanting in the king's collection, or the specimens of which in his cabinet are not sufficiently clear and well defined in their figure: Of these the following is a list, drawn up conformably to the nomenclature adopted by M^r Danbenton, in his methodical arrangement of minerals.

1. Rock crystal with two pyramids, without any sign of an intermediate prism. 2. Obliquely prismatic feld-spar, with four sides. 3. Octaedra cuneiform heavy spar, with acute summits. 4. Fluor spar in regular octaedra. 5. Calcareous spar in acute and highly salient rhomboids. 6. Calcareous spar with six rhomboidal sides, and six lozenge faces. 7. Ferruginous pyrites with twenty triangular faces. 8. Cobalt mineralised by sulphur.

To facilitate their search after these varieties, the academy will procure for the navigators polyedra in wood, fashioned to the exact resemblance of their figures.

The navigators will of course bring with them specimens of those kinds of wood and marble, which may appear to them most interesting. It may be observed, that the specimens of this kind in the king's cabinet are seven inches in length, by five in breadth: and such a size at least is necessary, to render the characters of a piece of wood or marble perspicuous. For

wood, too, a transverse section is necessary: and from a block of ten inches it is easy to take a slice, cut transversely, and another of seven inches long, sawn through the pith, in the direction of the fibres.

When the voyagers penetrate into the interior of a country, they may find tourmalines, and other crystals, which become electric by heat alone. As most of these crystals are in groups, adhere to the gangue by one extremity, and stand in different directions, the academy would wish them to make experiments for the purpose of ascertaining whether the positive or negative electricity, which these crystals regularly exhibit at one of their ends, have any relation to the position of the crystals, either as it respects the gangue or each other.

BOTANY.

The different voyages undertaken of late years have enriched the science of botany by the discovery of a number of plants, formerly unknown; and nature is so fertile, that we have reason to expect a new harvest, from the researches of our navigators. But it is desirable, that these researches should be particularly turned towards objects of utility, such as the knowledge of those plants, which the inhabitants of the different countries our navigators may visit are accustomed to employ, either as food or medicine, or for the purposes of the arts. They may also bring back with them specimens and seeds of plants, of which the useful parts only are imported with us, and may give complete descriptions of them. In this class may be comprised almost all the woods employed by the dyer, and also by the cabinet-maker for works of ornament or utility, with certain roots, barks, and leaves, which constitute articles of commerce, and the true sources of which cannot be indifferent to our curiosity, while the use of them is familiar to us. The navigators cannot be too attentive, in general, to making a copious and diversified collection of the seeds of exotic plants and trees, taken from climates not too widely differing from that of France, which,

naturalising themselves in our soil, may hereafter adorn our plantations, or augment the number of our artificial meadows, by their productions.

In New Zealand a plant of the liliaceous family, known by the name of New Zealand flax, is cultivated, and employed by the natives for making cloth of different kinds and cordage. Captain Cook brought to England a considerable quantity of the seed, but none of it grew. The importation of a few of the plants themselves would probably be one of the most valuable presents the navigators could bestow on our soil.

In France we have only the male of the paper mulberry-tree, *morus papyrifera* Linnæi, from which paper is made in China, and stuffs in Otaheitee. We are acquainted with the female alone of the weeping willow, *salix babylonica* Linnæi. The male of a species of strawberry, called *fragaria chilensis* is equally unknown to us. This grows spontaneously in Chili, whence it was brought by M^r Frézier: its fruit, which sometimes attains the magnitude of a hen's egg in its native soil, is much less on the sets cultivated in France; a difference, which may arise in great measure from the want of the male, which is but imperfectly supplied by the common practice of employing sets of the hautboy, to fecundate the female sets of the strawberry of Chili. If circumstances should lead the navigators to those countries, which produce the different plants above mentioned, they may devise some means of conveying to us the sex we want of each species.

The academy has subjoined some notes, communicated to it by different members, among which they will find explanations of the processes that regard some of the objects proposed in this memoir.

Observations by Mr. Buache.

The government having particularly occupied itself in collecting all the geographical information to be obtained respecting the seas, that it is in-

tended to traverse in the course of this voyage, it will be sufficient here to point out what are the parts of these seas, in which new discoveries may be expected to be made.

I. In the southern part of the Pacific Ocean there are two tracts, of which little is yet known, and where new lands may be expected to be found.

The first is the tract to the south of Easter Island and Pitcairn's Island, between the latitudes of 30° and 35° . Cook's new charts point out there a group of islands, said to have been discovered by the Spaniards in 1773; and most of the navigators, who have passed this tract to the northward, have seen there signs of land. We see also in Dalrymple's history of voyages in the South Sea, that Juan Fernandez, sailing from Lima to Chili, about the year 1576, stood off from the coast of America about 40° , that he might not have continually to beat up against contrary winds; and that, after a month's sailing, he made a coast, which he believed to be a continent from it's extent. The country was extremely fertile, and inhabited by white people, of the stature of Europeans, who were clothed in a very beautiful stuff. They gave the voyagers a friendly reception, and supplied them with the productions of the country. Fernandez, purposing to equip some vessels, and return to this country with his shipmates, kept his discovery secret, and died before he could carry his scheme into execution, which was soon forgotten. This land of Fernandez, which is distinct from the island that bears his name, may possibly be the same with the islands said to have been discovered by the Spaniards in 1773.

The second tract, that claims a more particular examination, is that which is included between the New Hebrides and New Guinea. Mr de Bougainville, and Mr de Surville, are the only navigators, who have traversed this tract; and from the situation of the points of land they saw, there is every reason to imagine, that these belonged to the ancient islands discovered by Mendaña, in 1567, and since known by the name of the Islands of Solomon. Mr de Surville was in sight of these lands for more

than a hundred and twenty leagues, being all the time in the latitude assigned to Solomon's Islands.

As great part of the ancient discoveries of Mendaña and Quiros have been found again in modern times, it may with probability be expected, that the remainder will be re-discovered; and their memoirs deserve to be consulted. Quiros's Island of Taumago will no doubt be recognised, with the islands of Chicayana, Guaytopo, Pilen, Naupau, and others adjacent; since it was on leaving this island, or within ten days, that Quiros reached the Tierra del Espiritu Santo, now known by the name of the New Hebrides.

2. The northern part of the Pacific Ocean, still less known than the southern, may afford a greater number of discoveries. In the first place, to the south of the Marianne or Ladrone Islands, between the latitudes of 5° and 10° north, there is a chain of islands, divided into several clusters, which extends through more than 25° degrees of longitude. These islands are known only by a vague description, and a chart composed entirely from the report of the inhabitants of some of them, who were driven by a storm on the coasts of the Island of Guam, and who were interrogated by father Cantova respecting the situations of these islands. They have escaped the notice of navigators, who direct their course toward the Island of Guam, which is farther north.

That part of this ocean which is to the north-east of the Ladrone Islands, or the east of Japan, is equally unknown. We have only indications, that it contains islands in pretty considerable number, and not uninteresting: among others one has been mentioned, of some extent, lying about three hundred leagues to the east of Japan, whither it's inhabitants come to trade.

The land of Yeso, to the north of Japan, appears to be different from what it has been represented to be by the English and the Russians. The knowledge we have acquired of the eastern coast of Japan, from Cook's last voyage, leads us to believe, that the chart of the discovery of Yeso, made by

the Dutch vessel the *Kastricum*, is tolerably accurate: but the Dutch saw only part of this land, an acquaintance with which may be interesting.

3. On the western coast of America, to the north of California, the river of Martin d'Aguilar will unquestionably be found, in the latitude of 43° . Martin d'Aguilar was one of the pilots of Sebastian Viscaino, whose voyage in these parts is one of the most interesting ever made.

It is desirable to procure some knowledge of the people in the interior of the country to the north of California: and on this subject may be consulted the Travels of Carver, and even the Letter of Admiral de Fuente, however it may have been decried. It is to be wished, that, on their return, the navigators would look for the Islands of Denia and Marsevem, to the south of the Cape of Good Hope, whither the Dutch send for wood.

If they endeavour to penetrate towards the south pole, for the purpose of physical inquiries, it is desirable, that they should do it to the south-west of the Cape of Good Hope, or of Cape Horn.

In the former case they might rediscover Cape Circumcision, by searching for it in the longitude assigned it by M^r le Monnier, or between 3° and 4° east from the meridian of Paris; which is likely to be it's position from other considerations, independent of those of M^r le Monnier. In the latter, they might find the islands and harbour of Drake.

It is desirable, that the navigators should inform us of the names, which the inhabitants give to the islands they may discover; and that they should procure a vocabulary of the different appellations, by which the natives designate the most striking and necessary objects.

Examination of the Nature of the Air.

The examination of the atmospherical air, and it's degree of salubrity.

in different latitudes, on different coasts, and at different elevations, is an object the more interesting, because nothing accurate of this kind has yet been done, and we are altogether ignorant, whether the nature and composition of the air be the same in different parts of the world, and at different heights. The test of nitrous air appears to be the most simple and certain. In a memoir printed in the *Recueil de 1782*, Mr Lavoisier has shown, that, if more nitrous air than is necessary for saturation be employed, it would always be very easy to ascertain, by a simple calculation, the proportion of vital air contained in a given quantity of atmospherical.

A primary object, in experiments of this nature, is to obtain nitrous air as nearly pure as possible. That which is procured from the dissolution of quicksilver by the nitrous acid is the purest of all: but in want of this, that obtained from iron may be employed without inconvenience. The first thing to be done is, to introduce two hundred parts of nitrous air into the eudiometer: a hundred parts of the air to be examined are then to be added; and the number of parts remaining, after the absorption has taken place, are to be noted. Now if the residue be subtracted from the sum of the two airs, the remainder be multiplied by forty, and the product of this multiplication be divided by a hundred and nine, the quotient will express the quantity of vital air contained in a hundred parts of the air examined.

It will be advisable to mark the height of the barometer and thermometer.

Specific Gravity of the Air.

As the navigators intend to take with them an air-pump, it would not be amiss to procure a glass globe, fitted to it, and into which the air might afterwards be admitted. The difference in weight of this globe, or mat-rass, when empty and when filled with air, will give the specific gravity of the air in different latitudes. The height of the barometer and thermometer must be observed with care at the time of every such operation.

Experiments of this kind presuppose, that the navigators are provided with a very accurate balance, with which they may weigh very conveniently any thing to the exactness of half a grain.

Examination of Waters.

Abbé Chappe, in his voyage to California, determined the specific gravity of the sea water in various latitudes, and useful conclusions as to the saltiness of the water may be deduced from it. M^r de Cassini has published the result of these experiments, from notes which he found among the abbé's manuscripts. It would be interesting to pursue these experiments, as the navigators will have an opportunity of determining in one single voyage, as it were, the degree of saltiness of almost every sea. For this purpose nothing is wanting but a very sensible areometer, constructed on Fahrenheit's principles, and similar to that which M^r Lavoisier directed to be made for the abbé Chappe. The same instrument may be employed for determining the specific gravity of the waters of lakes, rivers, and springs; and by the addition of a few experiments with reagents, an idea of the quality as well as the quantity of the salts contained in these waters may be acquired.

When, from the specific gravity of a water, and trials with reagents, it shall appear to contain any thing interesting, a portion of it may be evaporated, and the residuum, carefully labelled, may be brought home, to be examined with care after the end of the voyage.

QUESTIONS

PROPOSED BY THE SOCIETY OF MEDICINE TO THE NAVIGATORS ACCOMPANYING M^r DE LA PÉROUSE, READ AT THE MEETING OF THE 31st OF MAY, 1785.

EVERY thing that concerns natural philosophy and natural history, that may occur in the voyage about to be undertaken round the world, cannot fail to be interesting to the art of physic, and may contribute to it's improvement: but the Society of Medicine conceives, that it ought to confine itself to those subjects, which more particularly concern the art it cultivates. As the questions it has to propose are somewhat numerous, it will arrange them under heads, forming so many divisions belonging to the different branches of the medical art.

SECTION I.

ANATOMY, PHYSIOLOGY.

The Structure of the Human Body, and the Functions of it's Parts.

MOST travellers have written on the general structure and form of body of the people they have met with in different countries: but it is well known, that their descriptions commonly abound with mistakes and exaggeration. There is every reason to expect more accuracy from the men of science who accompany M^r de la Pérouse, and they are requested particularly to notice the following points.

1. The ordinary structure of men and women; the long and short diameters of the head; the length of the superior and inferior extremities,

measured from the articulation at the shoulder to the end of the middle finger, and from the head of the thigh to the end of the great or of the second toe ; the circumference of the pelvis, the width of the chest, and that of the shoulders ; the height of the spine, measured from the top of the first of the cervical vertebræ to the sacrum. These proportions are taken from the divisions of painters.

2. The texture and colour of the skin, in general and in different parts ; and of the hair and nails.

3. The particular make of the head, or of the cranium ; that of the face, and especially of the forehead, nose, eyes, ears, mouth, chin, teeth, tongue, hair, and beard.

4. These different parts islanders are accustomed to disfigure by holes, incisions, and extraneous substances which they introduce into them, as well as by oils, and colours prepared from ochres or vegetable juices.

It may be of use to describe with accuracy the processes employed by the savages for making indelible marks on the skin ; the substances they use for this purpose ; how they prepare and apply them ; the age or circumstances under which the operation is performed ; and particularly the local alterations or deformities, or effects upon the individual, which result from it.

5. Excesses, defects, or varieties in the conformation of parts of the body ; as the flattening or elongation of the forehead, the contraction or spread of the nose, the enlargement of the mouth and ears. Are these varieties the regular consequences of natural organization, or the effects of particular practices ? Dampier says, that two teeth are wanting in the natives of Van Diemen's Land : is it from nature, or are they extracted ? Thus the two mouths observed by Cook's sailors in the inhabitants of the American coast, near Prince William's Sound, are produced by a transverse incision made through the lower lip. Do the female apron, the prodigious elon-

gation of the scrotum, and the brown spot on the backs of infants, observed in several countries of America, really exist? and are they owing to nature? Scarcely any thing has been said on the use of the two hands. The question respecting ambidextrous persons, or the preference of one hand to the other, has not yet sufficiently engaged the attention of naturalists: it is of importance therefore to inquire, whether the people, which our navigators may visit, employ both hands equally in their labours, or use one in preference; and whether the predilection in favour of the right, among polished nations, be any thing more than the effect of prejudice. It is of importance also to inquire, whether, among those people who are accustomed to go barefoot, there be any who use their feet as readily as their hands, and for the same purposes.

6. We have no positive information respecting the comparative strength of different men. It would be well to make trial of the burdens, which the inhabitants of countries, where nature has not been debilitated by effeminacy and the customs adopted in polished nations, are able to carry, and of the ground they can pass over in a given time, both walking and running.

7. The nature of the senses of sight, hearing, and smell, is capable of furnishing important facts respecting the strength or weakness of their organs. Much has been said of the acuteness of smell among savages: it would be interesting to verify this, and to examine whether this acuteness of smell do not exist to the detriment of some other sense in the individuals who possess it.

8. The voice, and the greater or less distinctness of articulation, are of importance to be examined, as well as the expression of pleasure, pain, and joy.

9. The age of puberty in males and females. Are the latter subject to the periodical evacuation in all climates? Has the climate any influence in it's copiousness, and what is the period of it's cessation? How do the

women conduct themselves during pregnancy? Are their labours easy, or difficult? Do they require assistance in parturition? Do they tie the navel string? Is this operation performed before or after the delivery of the placenta? Do they swaddle their infants, or what methods do they employ instead of swaddling? Are any practices adopted with regard to children as soon as born, as moulding their heads, or washing them? Do the mothers suckle them? and to what age? Are more boys born than girls?

10. How many children die from the time of birth to the age of puberty? and what is the general term of life in different climates?

11. The quickness or slowness of the pulse, compared with that of Europeans, which is about sixty-five or seventy pulsations in a minute.

12. The relation of the colour of the skin to that of the fluids. In men of more or less swarthy complexions, has the colour of the spermatic fluid, the medullary substance of the brain, and the blood, any analogy to that of the skin? Among those who are black is there any variation of colour found in individuals, such as pale or white negroes, &c.? Is this variation the consequence of disease, or of a constitution altered by the influence of climate, as is supposed of negroes transported into cold countries?

13. It has been said, that men are frequently found in America, whose breasts afford milk in sufficient quantity to suckle children: is this true? What are we to think of the hermaphrodites of Louisiana? Does a savage life render the impulse of love periodical in different nations? Is it true, that some natives of America procure insects to sting the penis, so as to excite considerable tumefaction?

14. We take no notice of giants, or pigmies, or men with tails, and the like, because these pretended freaks of nature have never been seen, except by ignorant or prejudiced travellers, or existed only in their heated imaginations.

SECTION II.

HYGEINE.

Of the Air, Water, Food, Clothing, Habitations, Exercises, and Passions, as far as they affect the Health of Men.

THIS branch of medicine offers the greatest number of observations to travellers, but it is one of those on which we have the fewest questions to propose, because it is one to which all more or less minutely attend. Accordingly we shall only point out the following articles :

1. The nature of the air of different places, examined by the eudiometer ; it's highest and lowest temperature in the sun, and in the shade ; it's dryness, humidity, gravity, and elasticity ; it's state of electricity, measured by different electrometers, particularly by that of M^r de Saussure ; the division of the seasons ; the prevailing winds, or their variations ; the nature of meteors, as snow, hail, rain, thunder, hurricanes, water-spouts, and whirlwinds ; the alteration of the air by vapours, or by the emanations from vegetables, comparing, according to the experiments of Ingenhousz, the fluids which exhale from their different parts in the sun or in the shade, particularly with regard to those, the vicinity of which is supposed to be dangerous.

2. The examination of the sea-water at different depths, and more or less distant from the coasts ; that of fresh and brackish waters, and the nature of the salts they contain, for which purpose it is recommended to the navigators, to employ the principal re-agents recommended by Bergman, and more especially evaporation ; those which the islanders drink, and the different uses they make of them ; mineral waters, warm or cold ; artificial drinks, fresh or fermented ; the manner of preparing them ; the

vegetable or animal substances of which they are composed; their effects: among these we particularly urge attention to the *kava*, a liquor prepared from a root in the islands of the South Sea, to which Anderson ascribes a stupefactive quality, and the quality of drying up the skin of those who drink it to excess, and causing it to fall off in scales.

3. Aliments. Do the inhabitants of the different countries that may be visited live on vegetable or animal food, or is their diet compounded of both? Do they season their food? How do they prepare it? Do they eat at regular hours, and sparingly, or in large quantity? Do they use salt with their viands? What analogy have the roots, fruits, &c. which they eat, with our vegetables? What farinaceous vegetables do they use? What species of fern is it, that contains a gelatinous substance, which serves the New-Zealanders as food? Have they not nutritious substances, which they take to sea with them in the form of powder? From what plants are they obtained, and by what processes are they prepared? Might not vegetable substances be found, in the countries visited, unknown to the natives, which may serve for food? Are there not vegetables, from which a saccharine substance may be obtained, analogous to that of the sugar-cane, with more facility, and less expense, than our sugar?

4. Habitations, their form, size, apertures, and aspect; the soil on which they are founded; the materials with which they are constructed; the kind of shelter they afford; their dryness or dampness; whether the inhabitants retire to them during the night, and throughout the year, or in certain seasons; what time they spend in them in the day; in what number they assemble in them, in proportion to their extent; whether they sleep in them on beds, on mats, or on the ground; whether there be men who have no habitation, and live constantly in the open air. Clothing, its form, substances, and varieties.

5. The occupations of both sexes, their labours, and amusements: how far they tend to preserve or destroy health.

6. The passions, manners, and predominant character of every nation: particular customs calculated to promote the excretion of different humours, as those of chewing tobacco, betel, or some analogous substance, of smoking, of using frictions, inunctions, warm or cold, dry or vapour baths; the method of carousing; the influence of these different customs, and particularly of oleaginous inunctions and tatooing, on perspiration.

SECTION III.

OF DISEASES.

DISEASES peculiar to the climates that will be visited may furnish important observations. Cook and Anderson have spoken, though in very general terms, of those which they observed at the Society and Friendly Islands. Among the inhabitants of the latter they observed a species of blindness occasioned by a disease of the cornea; tetters, which left blotches on the skin, and affected half the natives; large ulcers, of a malignant nature, as they destroyed the noses of many who were attacked by them; an indolent firm swelling, which affects the legs and arms; and a tumour of the same sort in the testicles. Anderson, to whom we are indebted for these observations, has mentioned five or six diseases which he saw at Otaheitee; but he particularises only the dropsy, the *fefai* or indolent swelling, and the venereal disease, which the crew of captain Cook introduced on his first two visits.

Cutaneous diseases appear to be those, to which the islanders are most liable.

Though Anderson saw no sick person confined to his bed, and the islanders of the South Sea in general do not treat the diseased methodically,

we would request the navigators, carefully to notice the following objects, some of which relate to diseases considered as new in our climates.

1. Are the islanders subject to acute diseases, or fevers? Anderson has mentioned only chronical diseases. Among the former do eruptive diseases occur? Does the small-pox exist? What is its usual course, and what ravages does it occasion? Are the people, who may be visited, acquainted with inoculation? Is there any climate in which this disease is endemial? Are they liable to contagious, or epidemic diseases? Have they ever been visited by the plague? Are their children subject to tetanus and the croup? An accurate description of all diseases of this kind is required, with particular regard to their crises, and a comparison of their nature and progress with those of the same diseases in Europe.

2. The most frequent among the chronical diseases in the South-Sea islands appear to be those which attack the skin. To what can be ascribed the number of tetterous eruptions and ulcers observed by Anderson in those islands? Are they owing to the use of oleaginous inunctions, or to the stings of insects? Are insects frequently engendered in them, as is the case in ulcers in hot climates? Are not those ulcers, which erode the face, and destroy the nose, of the cancerous kind? Are the natives subject to the leprosy? Is the indolent swelling of the legs and arms, observed by Cook, ascribable to this disease? Are they liable to phthiriasis, and the Guinea worm?

3. Does the venereal disease exist in the country that may be visited, whether continent or island? Does it appear to be native, or to have been imported? What are the remedies employed for its cure? What is the state of this disease in the Friendly and Society Islands, to which it was first conveyed by Cook? What are the symptoms it exhibits? Is it true, that the islanders are unacquainted with the gonorrhœa?

4. Is the scurvy endemic in any latitude? What are its symptoms?

and effects, in hot countries, and in cold? What are the remedies employed in it?

5. Are the rickets, and the deformities they occasion, known in the countries that may be visited? Do nervous, convulsive, or spasmodic diseases, and in particular the epilepsy, exist in them? Are infants subject to any ailments, and particularly convulsions, during dentition?

6. Are there any men, or women, to whom the cure of diseases is particularly entrusted? What medicines, or what modes of treatment, do they employ? Are there any hospitals, or are any kind of sick persons separated from society?

SECTION IV.

OF THE MATERIA MEDICA.

IT appears from the report of Anderson, that the priests are the only persons in the South Sea islands, who take upon them the cure of the sick, and that they administer in some cases the juices of herbs. But he says nothing respecting these herbs, or the different means employed against the cutaneous diseases, ulcers, tumours, and dropsy, to which they are subject. According to this naturalist, the remedy to which the women have recourse against the consequences of parturition consists in sitting on hot stones, wrapped up in two pieces of cloth, between which they put a quantity of a small plant of the mustard kind. This process induces a profuse perspiration; but it has not succeeded in the venereal disease. These people, consequently, have very little knowledge of the virtues of such drugs as they are furnished with by the hand of nature: they have not even a single emetic. It will depend upon the navigators themselves, therefore, to detect the virtues of those plants, the taste and other sensible properties of which may afford them some light, both in the islands of the South Sea,

and wherever they may land. With this view the following hints are offered them.

1. To examine the taste and smell of the roots, wood, bark, leaves, flowers, fruit, and seeds of the vegetables of countries little known, and compare them with the different vegetable substances used medicinally in Europe: and to do the same with regard to the juices that exude from trees, and animal substances.
2. To notice the different remedies employed, in the hot countries where they may land, against the diseases to which the natives are liable; and to describe even the superstitious practices, which are frequently the sole medicaments of barbarous nations.
3. To try decoctions of some 'emollient, aromatic, and acrid plants, in the diseases of the skin, to which the islanders are subject.
4. To employ mercurial frictions against the venereal disease, with which the inhabitants of the South Sea islands are attacked, and furnish them with the means of freeing themselves from this dreadful scourge. Particularly to observe the effect of mercurials on these people.
5. To inquire, whether some sudorific plants of these islands, such as in particular the *lobelia syphilitica*, (*rapuntium Americanum flore dilute cœruleo*,) and the *celastrus inermis*, *Linnaei*, do not possess antivenereal virtues.
6. To examine whether some of the hot countries do not furnish drugs analogous to the cinchona, simarouba, ipecacuanha, camphor, opium, &c.; and whether the islands do not contain emetic or purgative vegetables, from which advantage might be derived.
7. To collect information, and make observations on the properties of the *anacardium*, which is considered in Louisiana as a remedy for insanity;

on the virtues of the *telephium*, and the *gramen marinum*, which the Greenlanders prefer to the cochlearia for the cure of the scurvy; on the Winter's bark, the roots of Belaage*, Columbo†, and Lopez‡.

8. To point out what people poison their arrows; what substances they employ for this purpose; and the nature, and description of the plants from which they extract the venomous juices they use, and particularly the remedies to which they have recourse for the prevention of their deleterious effects; above all to ascertain, whether salt and sugar can be considered as an antidote against the wounds inflicted by these arrows, as there is some reason to suppose from the experiments of la Condamine.

9. To examine venomous animals, particularly serpents and fishes, and endeavour to discover the cause to which this dangerous quality may be owing in the latter, with the means of preventing it's effects.

10. Carefully to collect the remedies, both internal and external, which are reputed specifics in the diseases of different people: to describe the nature of these specifics, the mode of preparing them, the manner of using them, their doses, their effects, and the period of the disease in which they are employed. It is thus we have learned from the Peruvians the virtues of the cinchona.

11. Lastly, to collect in a particular herbal, distinct from that of botany, the plants, or parts of plants, which are used as medicine, food, or poison, in every country at which the ships may touch.

* At Madagascar. † In the Island of Ceylon. ‡ From the coast of Mosambique.

SECTION V.

SURGERY.

Surgical Diseases and Operations.

ANDERSON observes, that surgery has made greater progress than physic, as must naturally be the case, among people subject to few diseases, but exposed like all other men to accidental injuries. Cook speaks of a woman of Lefooga, in New Zealand, who exercised the profession of an oculist. The instruments she used were two slender wooden probes, with which she had brushed the eyes so as to make them bleed. It appears, that the natives of the Friendly Islands entertain no dread of wounds, as they voluntarily inflict them on their own heads, to express their grief: they cut off their little finger with a stone hatchet when they are ill, and one of the joints of that finger when their chiefs labour under disease. Many of the islanders are seen to want the little finger on one or both hands. Superstition, no doubt, is at the bottom of this practice. They make incisions in different parts of the body, and particularly in the legs. Anderson remarks, it is true, that they are very indifferent surgeons, for he had seen the stump of an arm, which was taken off, that bore no marks of skilful operation; and a man going about with a dislocated shoulder, some months after the accident, from their being ignorant of a method to reduce it. Yet, by his own confession, these islanders were not ignorant what wounds are mortal. They place splints on fractured limbs; and even, if part of the substance of the bone be lost, insert a piece of wood between the fractured ends, made hollow like the deficient part; and they pointed out to him wounds inflicted from spears, which we should have pronounced mortal, but from which these people recovered. Finally, at Otaheitee there are men, called *Taboua*, who take upon them the office of cutting or incising the foreskin of infants, which they perform with a shark's tooth at a single

stroke; and they cure the swelling that supervenes by the application of hot stones. The facts, which it appears to us important to collect on this branch of surgery, may be reduced to the following:

1. Are dislocations, fractures, herniæ, and surgical diseases in general, very common among men living in a state of nature?
2. What means do they employ for the cure of these different complaints?
3. Have they any peculiar instruments? What is their shape, of what are they made, and how are they used? Purchase and form a collection of them.
4. Are circumcision and infibulation practised? How are they performed?
5. Are there any men, or women, whose particular office it is, to cure this or that surgical disease, as of the eyes, ears, teeth, skin, or parturition?
6. What are the form and nature of the weapons they use in battle, and the wounds these weapons inflict, and the manner in which they treat and cure these wounds?

Louvre, May 31,
1785.

Signed Mauduyt, Vicq-d'Azyr, de Four-
croy, and Thouret.

I certify that this copy agrees with the original, deposited at the office of the secretary of the society of medicine, by which society I am directed to transmit it as soon as possible to the marine minister.

Signed Vicq-d'Azyr, perpetual secretary.

EXPERIMENTS

TO BE MADE, FOR PRESERVING THE WATER PUT ON BOARD FROM CORRUPTION, COMMUNICATED TO M. DE LA PÉROUSE, CAPTAIN IN THE NAVY, ABOUT TO MAKE A VOYAGE ROUND THE WORLD, BY ABBÉ TESSIER, MEMBER OF THE ACADEMY OF SCIENCES, AND OF THE SOCIETY OF MEDICINE.

ONE of the most disagreeable circumstances attending a seafaring life is the necessity of drinking putrid water in distant voyages. Different methods have been proposed for remedying this: the object of some has been, to render the sea-water potable, which would be unquestionably advantageous on many occasions, but the processes have been found to be troublesome and expensive: it has been the aim of others, to prevent the water taken on board from corrupting by means of certain preparations; and these are undoubtedly the more simple, as they require no trouble during the voyage, and no carriage of fuel.

I shall not inquire, whether many experiments already proposed on this useful subject have been tried with that scrupulous attention, which disinterestedness and a sincere desire of discovering a truth of importance to mankind would alone ensure. Mr de la Pérouse's voyage round the world affords the most favourable opportunity for attempts of this kind: he will visit all latitudes; he is animated by the spirit of benevolence and the love of truth; his own enlightened mind will be assisted by those of the philosophers who accompany him; and therefore dependance may be placed on the information which he may bring back on his return.

It is with this view I have drawn up a scheme for experiments; exhibiting both simple and compound means, among which are some, which I believe have never yet been employed.

From what I have read in the works of navigators, and from conversations with various naval officers, it appears to me, that the cause of the corruption of water is the formation of insects, which, in certain latitudes where the climate is very hot, are hatched, die, and putrefy. These insects originate from eggs, deposited either in the water before it is put on board, or in the casks which contain it, before or during the voyage. Water taken on board in winter, or drawn from springs, is less liable to corruption, than what is shipped in the summer, or filled from a river: these differences are owing to the insects, which always deposit their eggs in summer, and more readily in some waters than in others. It is known, too, that wood frequently serves as a nidus for the eggs of insects; these therefore may exist in the staves of which the casks are made. I consider it as an object of no small importance, to ascertain how far this is the case.

Accordingly, I am of opinion, that the water alone should be made to undergo some preparation, the casks alone, and both at the same time. Hence it will appear, whether the eggs of the insects be wholly in the water, or wholly in the casks. Possibly they do not penetrate into the cask, but during the voyage: this also will appear from the following experiments, which will point out at the same time the best preventive. The first object is to ascertain the state of the water shipped, by examining its specific gravity with the areometer, its temperature with the thermometer, its purity or divisibility by the readiness with which it will dress dried pulse and dissolve soap. A memorandum will be made of the spring or river from which it is taken, the hour of the day, and the season of the year. The areometer and thermometer employed for the trial will be the same as those taken out on the voyage: a parcel of the same dried pulse, and of the same soap, will be carried out for subsequent trials. On the passage twenty casks will be chosen, of equal capacities, and similar to those which contain the rest of the ship's water. This number of casks for experiment need excite no alarm, when it is considered, that the water preserved in them will be drunk on the voyage; that at the worst it will not be inferior in quality to the rest of the stock; and that it may be deducted from the quantity, which would otherwise be taken on board.

The experimental casks will be made of the same wood, and hooped in the same manner, as the other water-casks; and placed in the same part of the vessel, without any particular precautions.

EXPERIMENT I.

The water with which two of the casks will be filled is previously to be set over the fire, and exposed to a boiling heat for half an hour. No insect's eggs can support this heat, without being destroyed. This process, simple as it is, has never I believe been tried: sailors have made a step towards it, for they sometimes throw red hot balls into water taken from certain places. On one of these casks will be marked B W, that is to say, boiled water, No. 1; on the other, B W, No. 2.

EXPERIMENT II.

The insides of two casks will be impregnated two or three times with a solution of quicklime in boiling water. For this purpose a painter's brush is to be used, which is to be rubbed hard against the staves, that the lime-water may penetrate the farther. It is obvious, that for this purpose the heads of the casks must be taken out, and that the inside of the head must be prepared in the same way before it is replaced. These casks will be filled with unboiled water. On one will be marked S L W, simple limed water, No. 1; on the other, S L W, No. 2.

EXPERIMENT III.

In this experiment the two preceding are to be combined. Two casks, prepared as in the second experiment, will be filled with water previously boiled: one will be marked B W L, boiled water limed, No. 1; the other, B W L, No. 2.

EXPERIMENT IV.

Two other casks, impregnated with lime in the same manner, are to be filled with boiling water, to which vitriolic acid is to be added in the proportion of four ounces to two hundred and fifty Paris pints * of water. One will be marked V B W L, vitriolated boiled water limed, No. 1; the other V B W L, No. 2.

EXPERIMENT V.

Into two casks will simply be put unboiled water, mixed with vitriolic acid in the same proportion as above. The casks are to undergo no preparation. Of these one will be marked S V W, simple vitriolated water, N° 1; the other, S V W, N° 2.

EXPERIMENT VI.

Two other casks, unprepared, are to be filled with water previously boiled, to which vitriolic acid will be added in the proportion abovementioned. On one will be marked V B W, vitriolated boiled water, N° 1; on the other, V B W, N° 2.

EXPERIMENT VII.

Two casks are to be coated externally with tar, and filled with boiled water, without subjecting them to any preparation internally. One will be marked B W T E, boiled water tarred externally, N° 1; the other, B W T E, N° 2.

* Sixty-three gallons, wine measure. T.

EXPERIMENT VIII.

Two other casks are to be impregnated with lime as in the second, third, and fourth experiments, filled with boiled water, and tarred externally, as the preceding. On one will be marked B W L T, boiled water limed and tarred, N° 1; on the other, B W L T, N° 2.

EXPERIMENT IX.

Two casks coated externally with tar, are to be filled simply with water unboiled, and marked S W T, simple water tarred, N° 1 and N° 2.

EXPERIMENT X.

Two casks are to be filled with water, subjecting neither the water nor the casks to any preparation. This experiment is as a standard of comparison for all the rest.

For the idea of impregnating the insides of the casks with lime-water, I am indebted to M^r de la Peyre, surgeon in the navy, the fundamental part of whose process I have adopted, altering and correcting it as I thought necessary. The addition of vitriolic acid to water is by no means new.

It must be observed, that the water is not to be boiled, till the casks are ready to receive it; and that they must be filled with it immediately. Other insects might deposit their eggs in it, if it were suffered to remain long exposed after the boiling.

To say, that all the experimental casks must be close stopped, cannot be necessary.

When arrived at a latitude and temperature, in which the rest of the ship's water becomes putrid, that of one of each of the experimental casks must be examined by the taste and smell; its degree of transparency must be observed; its weight must be tried by the areometer; a thermometer must be introduced into it, to ascertain its temperature; in a given quantity of the water of each cask must be boiled a given quantity of dried pulse, the same as was used for the purpose before the water was taken on board, and reserved for the trial; and, lastly, a given quantity of the soap before employed must be dissolved in a given quantity of the water.

If any insects be formed, their species must be examined, their metamorphoses observed, and the degrees of the corruption and putrefaction of the water must be noticed. It would not be amiss to preserve some of these insects in spirits, in order to bring them to France.

If the navigators be not in want of the water of the remaining ten casks, they should not be touched, till the ships arrive in a different climate, but still in a latitude where common water putrifies. In this case they will be examined as in the former.

An exact account of every thing done and observed in these experiments will be taken, in the form of a legal deposition: and this deposition is to be signed by M^r de la Pérouse, his officers, and the natural philosophers on board.

If this scheme of experiments be deemed important, it is obviously very desirable, that each of the vessels under the command of M^r de la Pérouse should repeat them at the same time: they may separate, and visit different parts: two sets of observations will reciprocally confirm each other, and amount to demonstration. There is the less reason for objection, as the water employed for the experiments will be as good as any other, and will not uselessly occupy room in the vessels, as it may be drunk.

I request M^r de la Pérouse to sign two copies of this scheme, which I

will sign also: he shall keep one and I the other. They will be proofs of his pledging himself to the public, for the performance of experiments, which may be to the advantage of navigation: at least they are proposed with this design.

Rambouillet, May 19, 1785.

Signed Tessier, and la Pérouse.

MEMOIR

FOR THE DIRECTION OF THE GARDENER IN THE DUTIES HE HAS
TO PERFORM ON HIS VOYAGE ROUND THE WORLD; BY M^r THOUIN,
FIRST GARDENER OF THE BOTANIC GARDEN.

THE objects of the mission of the gardener, who will accompany M^r de la Pérouse on his expedition, being to convey to the natives of the countries that will be visited such vegetable productions of Europe, as may be of utility to them, and to bring back from those countries such as may enrich this quarter of the globe, it appears proper, to divide this memoir into two parts, each treating separately of one of these objects.

PART THE FIRST.

OF THE CHOICE, NATURE, AND CULTIVATION OF THE VEGETABLES
TO BE EXPORTED FROM FRANCE.

OF all the presents, which the royal munificence intends to bestow on the inhabitants of the newly discovered countries, vegetables conducive to the support of man are unquestionably those, which will afford them the most permanent benefit, and tend most to promote their happiness.

A selection of these vegetables ought to be made from our leguminous plants, and most pleasing fruit-trees. Such fruits and vegetables as require no preparation, to render them fit for food, claim the first rank: those which need only to be roasted, to become eatable, hold the second. Presents to be made to people, who, having no vessels proper for boiling food,

could not make use of vegetable productions requiring this mode of preparation, should be confined to those two kinds. These considerations have been our guides in forming the catalogues, which terminate this memoir.

It is farther to be observed, by way of diminishing the expense of purchase, that the seeds of such varieties of vegetables as require nice and assiduous cultivation should not be taken. These seeds, left to themselves in climates so different from their own, or at most experiencing but a rude kind of cultivation, would soon return to their primitive species, and thus uselessly occasion double labour.

The selection being made, it is proper to determine how the vegetables will most advantageously be conveyed.

There is no doubt but seed, while it is the least expensive in the purchase, and the most easy of conveyance, is in general the most certain, for multiplying the productions of one climate in another: but it requires attention in choosing it, caution for preserving it during the voyage, and care for sowing it with success in the different places for which it is intended.

The most scrupulous attention will be paid to purchase only seeds of the last gathering, thoroughly ripened, and perfectly sound. Such as are wrinkled, or penetrated by insects, should be carefully rejected, not only as useless, but even as detrimental to the preservation of the rest.

The seeds thus chosen should be divided into two classes: the first will comprise all such as require only the exclusion of air and moisture, to preserve them till they arrive at the place of their destination; the second, those which it will be necessary to bring in earth or sand, to prevent their losing the property of germination, such as the stones of our fruit trees, the seeds of many umbelliferous plants, &c.

The first should be put into brown-paper bags, and then into tin boxes

soldered as closely as possible: the second should be placed in layers with earth or sand, also in tin boxes, very nicely closed.

These different boxes, after being properly soldered, must be packed in strong cases, which are to be covered with oil-cloth; and placed in a part of the vessel least exposed to damp, and best secured both from extreme heat and extreme cold; where they are to remain, without being opened, till the time when it will be proper to sow them.

As it is probable, that the sowings will not be confined to one single place, and that New Zealand, the Sandwich Islands, the Friendly Islands, and the Society Islands, will have their respective shares of these presents; we think it will be proper, in order to avoid the admission of air to seeds to be sown at very different periods, to divide the whole collection into four parts, each of which may be contained in one case, not to be opened till the time of sowing the seeds. This will prevent an inconvenience, which might prove highly detrimental.

Order being indispensable in a collection of this kind, the gardener will be careful to write on each packet the name of the seed it contains, to enter them in a catalogue as he packs them up in the tin boxes, to number these boxes conformably to his catalogue, and then to place them numerically in each of the cases which is to contain an assortment. This will enable him to find what he wants at any time readily, and without trouble.

It is scarcely possible to lay down a precise plan for the sowing of these seeds, and their cultivation, in places which will be visited with such rapidity. All that can be said must be confined to a general outline, which the judgment of the gardener will fill up.

On his arrival at a place, where it is intended to make a sowing, the first care of the gardener should be, to learn the temperature of the climate, and to examine whether the productions of the soil, particularly the annual plants, be in a state of growth, rest, or decay. These observations will

direct him in the choice of seeds adapted to the climate, and the exposures most favourable for sowing them.

In very cold countries, if he arrive in autumn or winter, he must not think of sowing the seeds of annual plants, which would either not germinate, or be killed by the first frosts. The most he could risk would be some seeds of trees, such as the kernels of apples and grapes, the stones of different fruits, &c. ; because, as these seeds will not come up before the spring, they may live notwithstanding the cold. If he arrive in the spring or summer, there is no reason why he should not sow seeds of every species of plant, which it may be presumed will naturalize itself to the climate, observing to choose, as far as possible, such a soil and exposure as are suitable to each.

In very hot countries, drought, in general, is one of the inconveniences most prejudicial to the propagation of vegetables. To guard against this, it is advisable to choose, for the place of sowing, a humid soil, banks of rivulets, or low lands, in the neighbourhood of the sea ; and shady places should be preferred for cultivation.

The spots intended for sowing being marked out, it is necessary, that the gardener should direct them to be dug up, and prepare them for the reception of the seed. He will then sow his crops, and attend to their cultivation as long as the stay of the ships will permit. If he could inspire some of the natives with an inclination for agriculture, and make them sensible of the value of the productions arising from it, he would doubly accomplish the beneficent end, which it is hoped will be obtained from his mission.

In addition to these careful cultivations, the gardener may try another mode, which, if it produce no great advantage, will cost him little trouble. Whenever he is disposed for a walk into the country, he has only to fill his pockets with a mixture of various seeds, and scatter them, as he goes, in places where they will be most likely to succeed: a few strokes with a dibble will be sufficient to bury the seed, and stir the soil.

That nothing may be neglected, which can render his voyage both useful and pleasant, the gardener should keep an accurate journal of all his proceedings: the periods of his sowings, their success, the progress of vegetation, and it's results, when he has it in his power to observe them, will furnish us with standards of comparison, which may tend to the improvement of the art in our own country.

As there are several vegetables, which might be very useful to the inhabitants of the places that will be visited, but the seeds of which do not possess the quality of propagating our choice varieties, the result of long cultivation, such as the greater part of our fruit-trees, it will be proper to endeavour to carry abroad some of each of these sorts of trees in a growing state; which will be the subject of the following chapter. But, beside this, it will be proper not to omit taking out a quantity of the seeds of these trees; for the seeds will produce wild fruits, which, similar to those that fed our forefathers, may serve as food to men still less civilised than they, and be to them a fund of wealth, from which their industry, as it improves, may hereafter derive more considerable advantage.

OF THE CONVEYANCE OF VEGETABLES IN A STATE OF GROWTH.

The present season of the year does not admit the taking up of trees growing in the open ground, the vegetation of which is now in full vigour; but whatever is cultivated only in the open ground elsewhere, may be found in pots at Paris. It is necessary, therefore, to procure these from our nurserymen; as the trifling expense incurred by conveying them to the place of embarkation will be amply compensated by the certainty of success.

Trees cannot be carried abroad, with the least hope of being preserved alive, except in boxes, in which they may vegetate during the voyage. For this purpose a box must be provided, forty inches long, twenty broad, and as many deep, with ten or a dozen holes in the bottom for draining off the

superfluous water. The upper part is to consist of a triangular frame, fitted with wire lattices, glass-frames, and outside shutters, in order to keep up a free circulation of air, augment the heat when necessary, and defend the plants from the cold.

The sorts being chosen conformably to the catalogue drawn up and placed at the end of this memoir, it will be proper to procure only young plants, and such as are full of branches throughout the whole length of the stem. Care must be taken, that they are healthy, and vigorous, and their shoots as near as may be to the root. When as many as one box will hold are collected, they must be disposed in the following manner.

The holes at the bottom of the box being so covered as to prevent the earth from being washed away by the water that drains out of them, a layer of strong earth, three inches thick, must be put in, and lightly pressed down. On this layer is to be placed the first range of trees, taken from the largest, and those which, like figs, vines, cherry-trees, &c. will not be injured by burying the stem tolerably deep. The clods of earth taken out of the pots with these trees are to be placed as close together as possible, and the vacuities between them are to be filled up with heath-mould, which is to be well settled, so as to form one solid mass. This first stage is to be covered with a bed of heath-mould, two inches thick. The second is then to be arranged, like the first, clod against clod, the tallest stems in the middle, and the shortest, in gradation, round the sides. All the vacuities are then to be filled up with heath-sand, without any regard to burying the stems of the trees of the lower stage, provided three or four eyes of each be above the ground, which will be sufficient for their preservation. Lastly the whole mass will be consolidated, either by striking the box against the ground, or by pressing down the earth with the fist, so that no vacuum be left, and the shaking of the carriage and rolling of the ship occasion no derangement. To render this more secure, a layer of moss may be spread over the surface of the upper stratum, and covered with another of new wheat-straw, both together an inch and half thick;

and these may be confined by slips of wood crossing the box between the stems of the trees without touching them, and nailed to ledges fastened to the longer sides of the box.

The plantation being finished, the trees are to be pruned, so that the branches nearest the wire lattice will not touch it by an inch or two: the whole mass must then be well watered, and a few days after it may be sent off for Brest by the waggon.

That there may be less waste of moisture from the box during a journey, which may continue twelve or fourteen days without a possibility of replacing it, it will be proper to close the side shutters; but the two small ones at the end should remain open, that the air may be renewed, and the plants prevented from decay.

When the boxes arrive at Brest, the gardener's first care must be to open them, and remove the wire lattice, in order to cut off such branches of the trees as may be injured. He will then examine the earth, so as to be able to form a judgment of it's dryness or moisture, and repair any little disturbance produced in it by the journey. After these trees have been thus deprived of the free access of air, it will not be prudent to expose them suddenly to the sun; but they must be defended from it by placing the boxes in the shade, or covering them with canvass for a few days.

The management during the voyage will require only occasional watering, and protecting the trees from the extremes of heat and cold, either by covering them with canvass during the day, and giving them as much air as possible at night, or by placing them between decks in cold latitudes. Now and then a little use of the pruning knife will be necessary, to prevent the too luxuriant plants from injuring their neighbours.

When these trees arrive at the place of their destination, they should be taken out, with the earth adhering to the roots, as carefully as possible; planted in such exposures, and such soils, as are most suitable to their na-

ture; and the gardener will take care of them as long as he stays. If the whole of the package be not intended for one place, he will take out of the box only such as he intends to plant, and fill up their places with such productions of the country, as he may think would prove useful in Europe. The gardener will exert himself to make the natives understand, that these trees are presents, and that they ought to attend to them carefully, on account of the advantages they will derive from them. This is nearly all that can be said on the first part of the gardener's mission: we now proceed to the second.

PART THE SECOND.

OF THE COLLECTION OF SUCH VEGETABLES AS MAY BE USEFUL
IN EUROPE, AND OF THEIR PRESERVATION DURING THE
VOYAGE.

THIS collection ought to include 1, seeds; 2, the bulbs and fleshy roots of perennial plants; and 3, young sets of interesting trees, the seeds of which could not be procured.

Seeds ought to be gathered in the state of most perfect maturity, if it be practicable: but, as it may frequently happen, that the shortness of his stay will not permit the gardener to wait for the complete ripening of seeds, he should not on this account neglect to gather them; for still they may succeed: but in this case certain precautions are indispensable.

Herbaceous plants, the seeds of which may not be above three fourths or two thirds ripe, ought to be pulled up with their roots, tied in bundles, carried on board the ship, and hung up in a dry place, not exposed to the sun. Part of these seeds will undoubtedly ripen within six or eight days, when they may be gathered.

If it should happen, that the gardener meet with a very interesting plant, which he may be desirous of obtaining, but of which the seed is but just set, still he should not despair. In this case it will be proper to take up the plants with the earth adhering to their roots, and place them in baskets. These baskets should be covered for a few days; the plants should be watered morning and evening; and by degrees they should be uncovered. The seeds will ripen in the course of the voyage, and thus we shall not have to regret the neglect of perhaps the only opportunity of procuring Europe a valuable plant.

If the gardener be so fortunate as to meet with seeds perfectly ripe, the mode of harvesting them is by no means a matter of indifference with regard to their preservation. He must not only take care to preserve them in their husks, but even gather them with their external coverings and peduncles. Those which grow in pods, husks, and capsules, should remain in their cases, which it will be even proper to tie, that they may not open during the voyage: cones, and all dry fruit-cases in general, should be treated in a similar manner. The small seeds which grow in spikes, panicles, verticilli, and corymbi, should be gathered entire, with stalks five or six inches long; and these stalks should be twisted in different directions, to intercept all internal communication of the air to the germe of the seed.

The preservation of seeds, during a voyage of such length, and in such different climates, requires indispensable precautions. It is certain, that seeds included in their envelopes keep better than others: but it is necessary, that they be very dry, as well as the parts which accompany them; and that care be taken to free them from insects, and from the eggs of insects, which might hatch during the voyage, and eat the seeds unperceived. A few hours' exposure to a fervent sun will answer the first purpose: and if imperceptible insects, or eggs included in the envelopes of the seeds, be suspected, they may be destroyed in a few minutes, by placing them under a bell-glass with a little burning sulphur. When the gardener has satisfied himself, that the seeds contain neither insects nor superfluous moisture, he will wrap them up, each species separately, in strong

unsized paper. On each parcel he will put a number, referring to a specimen of the tree or plant, from which the seed was taken: and he will pack the different parcels in a tin box, as tightly as he can, both to save room, and to prevent the motion of the ship from causing them to rub each other to pieces. When the box is filled, the cover is to be put on and soldered as closely as possible, and immediately he will write upon it what it contains, as for instance: seeds collected at such a place, from such a time to such a time.

When several such boxes are filled, they should be packed up in a strong wooden case, covered with oil-cloth, and ticketed as above.

Naked seeds, of the size of a nut and upwards, require a different preparation. Immediately after they are gathered, they should be exposed to the air, in a close place, for a proper time, to evaporate their superfluous moisture, and bring them to a state of perfect maturity. They should then be examined, that such as are abortive, badly formed, or penetrated by insects, may be thrown away. When this is done, a tin box is to be taken, big enough to contain double the quantity of the seeds: on the bottom must be laid a stratum of earth, a finger thick, and on this a layer of seeds must be placed, a few lines distant from each other: these seeds are to be covered with earth to the depth of six lines, on which another layer of seeds is to be put; and so on, alternately, till within a finger's breadth of the top, where the last stratum of earth must be placed, which is to be strongly pressed down with the cover. This must be soldered close, as in the former case.

The earth used on this occasion should be neither too dry, nor too moist, but such as is found at the surface of the ground, when it has not rained for eight or ten days. If too dry, it would absorb the moisture necessary for the preservation of the seeds; if too moist, it might rot them. The success of this kind of package depends on a just medium between the two extremes, suited to the nature of the seed.

It is unnecessary to add, that it is of importance, after the box is soldered, to affix to it a direction expressing what it contains, and referring to the herbal, and the gardener's journal. The necessity of this precaution is obvious.

Naked seeds, below the size of a pea, may be put in mixed with the earth, without taking the trouble to arrange them in regular layers; though in other respects they are to be treated as the preceding.

Seeds inclosed in fleshy coverings, berries, or pulpy fruits, as figs, gooseberries, apples, peaches, and the like, should be taken out as soon as the fruit begins to decay, which is a sign of the perfect maturity of the seed. They are then to be spread abroad in the open air; after which they may be inclosed in tin boxes, with earth, in the manner directed above.

To increase the chances of success, and leave nothing to hazard, perhaps it would not be amiss, to pack up with earth, in the same manner as the naked seeds, a portion of each species of those that are included in capsules, pods, and the like. This precaution will be particularly useful at the beginning of the voyage; as the processes for the preservation of seed during so long a period cannot be too various.

All the boxes, which we have hitherto recommended to be soldered up as they are filled, ought on no account to be opened, previous to their arrival in France, and the period when they are to be sown. They will require no care on the passage, but to be placed in a part of the vessel least exposed to the variations of the atmosphere in the different climates. They ought also to be kept from too great damp, and more particularly from extreme dryness.

It is by no means clear, that there do not exist seeds, the germination of which it is impossible to retard: such as those of palms, myrtles, the class of the stellatæ, and all those in general, the seeds of which are filled by a horny substance, and which have but a very small embryo, lodged in a small

cavity. These families abound in pine trees, most of them useful. The little success of the seeds of these trees, which have been brought to us with many precautions, seems to prove the impossibility: other means, therefore, should be employed, to procure these desirable articles. We are of opinion, it would be proper to sow the seeds as they are gathered. For this purpose the gardener should procure a box of such dimensions as he may judge necessary for the quantity of seed he intends to put into it, but not less than twenty inches deep. This box should be filled with substantial mould, taken at the moment when wanted from a place abounding in plants; and he will sow the seeds in it, very close to one another, at different depths; the largest, as the cocoas of the Maldivé islands, eight inches deep; and the smallest, four lines. Between the earth and the upper edge of the box a space of two inches must be left for a layer of moss, to be confined by four or five battens nailed across the box, to secure the earth against the rolling of the ship. When the seed is sown, a row of hoops must be nailed over the top, and covered with wire-work, to preserve the contents from the ravages of rats, and the domestic animals of the ship, during the passage. The cultivation will consist in watering the earth, so as to keep it in a state of humidity favourable to the germination of the seeds; in preserving the plants from the too great fervour of the sun, by covering them in the day time with coarse canvass; more particularly in defending them from the cold, in latitudes where frost is to be apprehended, by removing them to the most sheltered part of the vessel; and in cautiously pruning the too vigorous plants, which might injure the more delicate. Two little doors, made in the two ends of the lattice, will render this operation easy, as often as it may be required.

Hitherto it has been supposed, that the gardener, to whom it will belong to make this collection of vegetables, would find the seeds, at the places where he lands, ripe, or nearly so: but it may happen, that the case shall prove otherwise, and, being in circumstances which render it impracticable for him to bring away the plants growing, he may feel himself obliged to quit a place, without exhibiting to Europe a single one of it's productions.

Even in this situation there is a resource, which might also be employed on less unfavourable occasions.

Every one knows, that the seeds of vegetables, as they ripen, fall to the ground; and that a great number of them are washed by the rains into the hollows, or carried by the winds to the borders of the woods. By sweeping up with a besom, therefore, from these different places, a few cubic feet of earth, taken from an extensive surface, we are sure of getting many seeds of indigenous plants; and this earth, being put into boxes after it is properly dried, will preserve those seeds till their arrival in Europe. Of this we have a proof in a quantity sent from Cayenne by Mr Aublet. This gentleman had embarked some sixty boxes filled with valuable plants and trees of that colony: the trees died on the passage; but the earth in which they grew, being spread over a considerable surface of hotbeds covered with frames, produced a great number of plants, many of which are now preserved in our gardens. This method, therefore, may be employed with success; and in some cases it is the only one, by which certain species of plants can be obtained.

The parts of fructification of the families of ferns, mushrooms, &c. are scarcely known, of course we are still less acquainted with their seeds. Attempts have been made to furnish Europe with them by transporting the roots, but hitherto without success. It is probable that by collecting some of the soil in which they grow, and mingling with it their leaves in different states, germes may be obtained, which, if they be properly managed at their first sprouting, may furnish us with desirable plants. For this purpose it is necessary, that the gardener be very attentive to enter in his journal the nature of the soil from which he makes his collection, its exposure, dryness, or moisture, and whether it were in an open or woody country.

To save room as much as possible, and to derive every advantage from the conveyance of naked seeds which it can afford, it will be advisable to choose the earth in which they are packed, as has been said above, rather

than take it indiscriminately. This will require a little additional attention, but it will be attended with advantages that will abundantly compensate.

In conclusion of what is to be said on the conveyance of seeds, we will attempt to assign the proportions, in which they ought to be collected.

Those trees and plants which may be useful in Europe for the nutrition of it's inhabitants, such as that species of fern, the root of which serves for food to the New-Zealanders, unquestionably claim the first rank. Plants used in the arts will occupy the second; those which may serve to ornament our gardens, the third; and those which are proper for botanic gardens alone, the last. The proportionate quantity of each species of seed collected should be governed likewise by the climate from which it is taken. In countries the temperature of which is analogous to that of Europe, no risk is incurred by collecting a large quantity, because, as the seed is to be sown in the open ground, there will be no difficulty in making use of it, and the quantity will furnish the means of cultivating them generally in the different provinces of France. Those of hot climates should be collected in less quantity, because, as they require hot beds, frames, and green-houses, to raise them, only a small quantity can be used; unless it were deemed proper to transmit a part of them to our colonies in the East and West Indies, in which case they should be such as it might be advantageous to cultivate.

Another observation of not less importance is, to collect a larger quantity of every species of seed in the latter years of the voyage, than in the former: because it is very probable, that, in spite of all possible care, part of the seed gathered in the beginning of the voyage will perish before the return of the vessels to Europe, and that there will be much of every species no longer in a state to grow, while the collections of the latter years will be in an infinitely better condition.

If the gardener were previously informed, that he should touch at any

European settlements, it would be judicious in him to make such previous arrangements, as would enable him to leave there a small package of little parcels of seeds of every kind that he had previously collected, with a duplicate of his herbal, the numbers in which should correspond with those on the parcels of seeds which he will bring to Europe. These seeds might be inclosed in tin boxes, packed in cases covered with oil-cloth, and directed to the marshal de Castries, for the royal gardens.

OF THE CONVEYANCE OF THE BULBS AND FLESHY ROOTS OF PERENNIAL PLANTS, AND OF THEIR CULTIVATION DURING THE VOYAGE.

If these plants be met with in their state of repose, that is, when their fructification is completed, and their stalks are dried, it will be unquestionably the most favourable season for taking them out of the ground. In this state they will require no farther care, than to free them from their coverings, which might imbibe the moisture of the air, and cause the bulbs to rot. An exposition to the sun for a few days will draw off their superfluous humidity, and they may then be put into boxes, in layers, with very dry fine sand.

When these plants are found in a state of full vegetation, they should be taken up with the earth about their roots, set in baskets, and taken care of, till their stalks die; when they may be taken up without hazard, and preserved by attending to the precautions given in the preceding article.

As the vegetation of these bulbs cannot be retarded, they will germinate at the customary period, whatever care may be taken: it is necessary, therefore, that the gardener examine the boxes containing them from time to time. When he perceives, that they are beginning to vegetate, he must take them out, and prepare for their reception one or more boxes, of eight inches, or a foot deep at most. These should be filled with a light, sandy,

succulent earth, taken from a soil that appears very fertile in plants, with a view to acquire indigenous productions, which would add to the chance, without increasing the trouble of conveyance. The bulbs may be planted half an inch distant from each other, and from an inch to four inches deep, according to their size. When the plantation is finished, the earth should be about two inches below the edge of the box, for the reception of a bed of long moss, or, in want of this, of dry grass. A few battens are to be nailed across, to secure the earth against the rolling of the vessel, and over the whole must be put a covering of hoops, with a wire lattice.

During the vegetation of these bulbous-rooted plants, the management of them will consist in lightly watering, pruning, and defending them from the fervour of the sun, too abundant rain, and more especially cold.

When the plants have done growing, it will be proper to refrain altogether from watering them, and leave them exposed to the utmost heat of the sun, that their stalks may dry the more speedily : after which the roots may be taken up, and replaced in their boxes, with the necessary precautions for their preservation. This will be repeated annually during the voyage.

That the history of the vegetation of these species of bulbs may not be lost by such repeated change of place, it will be proper to fasten with a wire to each, a number marked on lead, referring to the gardener's journal.

ON THE CHOICE OF TREES IN A STATE OF GROWTH, WHICH IT
MAY BE DEEMED DESIRABLE TO BRING BACK TO EUROPE, AND
OF THEIR CULTIVATION DURING THE VOYAGE.

This method of acquiring the productions of countries which may be visited, ought to be employed very sparingly, particularly in the beginning of the voyage. There are few vegetables, which can bear to be cultivated for three or four years in boxes, exposed to almost sudden changes from one

climate to another, though managed with all possible care and assiduity, according to the plan we are going to lay down. It is absolutely necessary, therefore, to confine this method to essential objects, the seed of which it is impossible to procure.

For this purpose young plants must be selected. Such as have arisen from seed are preferable to those which shoot from the trunk. They ought to be healthy and vigorous, their stems of the size of the thumb at bottom, and they should be branchy, if possible, from the very root. They should be transplanted with care, without breaking or injuring the roots.

They should be planted in boxes as near as may be to one another.

For the success of the operation the following measures ought to be taken. The box, formed of some strong timber, must be placed in a level position, on logs, which will keep the bottom a few inches from the deck, in a place sheltered from the sun. Holes are to be bored in the bottom of the box; and over these are to be placed shells, or little pebbles, to prevent the earth from falling out, while they leave a passage for the water. A bed of rich mould, two or three inches deep, is then to be laid all over the bottom of the box. If the trees or shrubs, for which the box is designed, have naked roots, they are to be arranged side by side, placing those which have the most bulky roots first, and those which are less abundantly furnished between them, all as close as possible, to save room. The roots are then to be buried completely up to the place where the stem begins, with fine mould, perfectly dry, that it may insinuate itself into all the vacuities between the roots; taking care, as the mould is scattered in, to settle it well, by striking the box against the ground from time to time, or pressing it down with a dibble. When this is done, the box must be watered repeatedly, till the water drains through the holes at the bottom; and the young trees are to be cut down to the length of seven or eight inches from the surface. It will be advisable to cover the earth with a layer of moss, a few inches thick, both to retain the moisture, and to secure the whole bed by means of battens.

If the roots of the shrubs, instead of being bare, be taken up with the earth about them, there will be less doubt of their succeeding. In this case the clods are to be placed as close as possible in the box; and to compensate for the loss of room their bulk will occasion, cuttings of trees capable of being propagated in that way may be planted between them, such as the *paletuviers*, figs, and other spongy trees. Seeds, too, may be sown in them, as in the others; and they may be managed in the same way in other respects.

When the boxes are thus filled with shrubs, they may be conveyed on board. Their cultivation should be conducted in the manner practised in our hot-houses. It will consist first in daily waterings, proportionate to the wants of the plants, and the heat of the climates from which they are taken: but it will be advisable to err rather from defect than excess, the consequences of which would be more likely to prove injurious. These waterings must be made with fresh water; that of the sea being injurious to almost all vegetables: and night and morning, in hot latitudes, with the rose on the spout of the watering pot, after the manner of small rain, so as to wash the leaves and stems before the mould is drenched with it. In cold latitudes, on the contrary, water should never be given, unless when absolutely necessary; and then the water should be poured out of the neck of the watering pot, at the hottest time of the day, and only at the feet of such plants as require it.

Beside these attentions, it is of importance, that the gardener examine his shrubs every day; free them from dead leaves and insects by which they might be injured; guard them against the cold, extreme heat, drought, and over abundant humidity; and, above all, in climates where they cannot be exposed to the open air, to renew the air of the boxes from time to time, by opening the little window at each extremity for a few hours; without which the plants would become languid, mouldy, and at length dead.

Succulent plants, of a mucilaginous nature, such as different species of cactus, aloes, euphorbiums, woody purslain, ficoides, and the like, may be

brought in a growing state, in the same manner as shrubs ; but they must not be mingled together, because they require different treatment. For these, separate boxes must be made. The earth, in which they are to be planted very near to each other, ought to be of a compact nature. A bed of six or eight inches deep will be sufficient for their reception. On this earth, instead of moss, a layer of long straw, or very dry hay, must be placed, and kept tight down by battens: and when the plants are set in the boxes, they are to be watered so copiously as to consolidate the earth about the roots during the voyage. These plants should not be watered, unless there is the most pressing necessity for it ; they should have air as often as possible ; and they should be particularly sheltered from the wet and the cold.

These are nearly all the precautions, that are essential to the success of growing plants. The skill of the gardener will supply a number of minute particulars, which it is impossible to foresee : but we think, that this mode of enriching Europe with foreign productions should not be adopted, till the year when the ships will be on their return home.

We shall conclude this memoir with a list of the tools and utensils, with which it is fit the gardener should be provided for his labours during the course of the voyage.

LIST OF THINGS NECESSARY FOR THE GARDENER DURING THE
VOYAGE.

1. Twenty-four tin boxes, of different sizes, from ten inches long, eight wide, and six deep, to twenty inches in length, sixteen in width, and twelve in depth.

These boxes are intended to contain part of the seeds sent from Europe, and they will serve for bringing back seeds collected on the voyage.

2. Two watering-pots, one with a simple neck, the other with a fine rose on it, for the plants on board, and for the first waterings of the seeds sown in different countries.
3. Four pruning knives of different sizes, to serve him both in the cultivation and collecting of plants.
4. Two grafting knives, for similar purposes.
5. Two mercurial thermometers, graduated according to Réaumur, to be placed in the boxes of growing plants, as a direction for the gardener in the management of them.
6. The ten punches necessary for impressing the numbers on the tickets for marking the trees and plants carried out from Europe, and those which may be brought back.
7. Sixty pounds of sheet lead, a line thick, for making the tickets.
8. A staff, two yards long, divided into feet, with a ferrule at the bottom, on which a little spade may be screwed, for taking up plants with their roots; and at the top another ferrule, to which a crook may be fastened, for getting branches of trees that are out of reach of the hand.
9. Two mattocks, with two points, one flat, the other sharp, for making the holes necessary for planting trees, or taking up such as are to be brought to Europe.
10. Two spades for the same purpose.
11. Two clasp-saws, for sawing off branches of trees, when the seed cannot be otherwise obtained.

VOYAGE ROUND THE WORLD.

12. Three tin boxes, sixteen inches long, ten wide, and six deep, divided into several compartments, opening with a hinge, and furnished with rings, that they may be suspended to a belt, when the gardener goes to collect seeds, and plants for the herbal.

13. Six other tin boxes, sixteen inches long, eleven wide, and a foot deep, for holding dried plants, with numbers answering to those put on the seeds collected.

14. Six reams of large and strong brown paper, unsized, for preparing the specimens of plants intended for the herbal.

15. Four reams of large writing paper, for containing the dried plants.

16. Four little quarto books of writing paper, for the gardener's journal, and lists of the vegetable productions he carries out, and those he may bring home.

17. A large writing case, furnished with two pen-knives, a dozen pencils, and a stylet or needle for dissecting seeds.

18. A magnifying glass with two lenses.

19. Duhamel's *Éléments d'Agriculture*, 2 vols. 12mo.

20. Duhamel's *Physique des Arbres*, 2 vols. 4to.

These two works are intended both for the instruction and amusement of the gardener during so long a voyage.

LIST OF SEEDS NECESSARY TO BE PROCURED, TO SOW IN THE DIFFERENT PLACES THAT MAY BE VISITED.

FIRST DIVISION.

Vegetables which may be eaten without Preparation.

FRUITS OF TREES.

Kernels of	{ Apples	-	-	6 bushels.
	{ Pears	-	-	6 ditto.
Seeds of	Gooseberries and currants			$\frac{1}{2}$ a bushel.
Stones of	{ Grapes	-	-	8 bushels.
	{ Peaches	-	-	2 ditto.
	{ Apricots	-	-	1 bushel.
	{ Plums	-	-	1 ditto.
	{ Cherries	-	-	$\frac{1}{2}$ ditto.
Almonds	-	-	-	2 bushels.
Nuts	-	-	-	2 ditto.

FRUITS OF PLANTS.

Seeds of	{ Melons of different kinds	3 gallons.
	{ Water-melons, red and white	2 ditto.
	{ Artichokes, white and violet	2 ditto.
	{ Guinea pepper	$\frac{1}{2}$ a gallon.

HERBS.

Seeds of	{ Celery of different varieties	1 bushel.
	{ Chervil	$\frac{1}{2}$ ditto.
	{ Common cresses	1 ditto.
	{ Parsley of different varieties	1 peck.
	{ Golden purslain	$\frac{1}{2}$ a gallon.
	{ Sorrel	$\frac{1}{2}$ ditto.
	{ Cabbage lettuce	$\frac{1}{2}$ a bushel.
	{ Roman lettuce	$\frac{1}{2}$ ditto.
	{ Small sallading lettuce	1 ditto.
	{ Wild endive or succory	1 ditto.

ROOTS.

Onions, white and red	-	-	1 bushel.
Turnips of different varieties	-	-	2 bushels.
Radishes of different species	-	-	3 gallons.
Turnip-rooted radishes, black and white	-	-	1 gallon.
Garlic	-	-	$\frac{1}{2}$ a gallon.
Eschalots	-	-	$\frac{1}{2}$ ditto.

SECOND DIVISION.

Substances which require no other Preparation for being eaten than roasting.

ROOTS.

Potatoes	-	-	$\frac{1}{2}$ a gallon.
Carrots of different varieties	-	-	2 bushels.
Skirret	-	-	6 quarts.
Parsnips	-	-	1 bushel.
Spanish salsafy	-	-	1 ditto.
White salsafy	-	-	$\frac{1}{2}$ ditto.
Beets, red, white, and yellow	-	-	3 bushels.

FARINACEOUS SEEDS.

To be procured at Brest.	Wheat of different species	8 bushels.
	Maize of different varieties	4 ditto.
	Buck-wheat	4 ditto.
	Piedmont rice	4 ditto.
	Barley of different species	4 ditto.
	Oats of different varieties	2 ditto.
	Rye	4 ditto.

THIRD DIVISION.

Vegetable Productions not eatable till boiled, and for this reason suited only to People who have proper Vessels for dressing them.

Pease of different species	-	-	-	6 bushels.
Kidney beans of different species	-	-	-	6 ditto.
Garden beans of different varieties	-	-	-	3 ditto.
Lentils of the large species	-	-	-	2 ditto.
Chick-pease, white and red	-	-	-	1 bushel.
Lupins	-	-	-	1 gallon.
Vetches, white and black	-	-	-	1 ditto.
Fenugreek	-	-	-	$\frac{1}{2}$ ditto.
White mustard	-	-	-	$\frac{1}{2}$ ditto.
The egg-plant	-	-	-	1 quart.
White cabbage	-	-	-	1 bushel.
Red cabbage	-	-	-	1 ditto.
Citrus and pompion	-	-	-	1 ditto.
Cucumber	-	-	-	$\frac{1}{2}$ a gallon.
Gourd	-	-	-	$\frac{1}{2}$ ditto.
Calebash gourd	-	-	-	$\frac{1}{2}$ ditto.
Orach	-	-	-	1 bushel.
Chard-beet	-	-	-	$\frac{1}{2}$ ditto.
Tobacco	-	-	-	1 pint.

Note. It will be proper to divide this assortment of seeds into four equal parts, putting each part into a separate box, not to be opened till the moment when the seeds are to be sown. This will prevent the inconvenience of admitting air to seeds, which are not to be employed till several months, or even a year, after they are gathered.

LIST OF VEGETABLES WHICH SHOULD BE CARRIED OUT IN A
STATE OF GROWTH.

FRUIT TREES AND SHRUBS.

- 1 Red calville apple-tree.
- 1 White.
- 2 True rennets.
- 2 D'api apple-trees.
- 1 English beury pear-tree.
- 2 Bon-chrétien pear-trees.
- 2 Crassan pear-trees.
- 2 Saint-Germain pear-trees.
- 4 Golden Chasselas vines.
- 4 Muscadine vines.
- 2 Raisin de Corinthe vines.
- 2 Large mignonne peach-trees.
- 1 Nectarine tree.
- 2 Reine-Claude plum-trees.
- 1 Mirabelle plum-tree.
- 2 Large Tours damsons.
- 2 Common apricot-trees.
- 2 Peach apricots.
- 3 White fig-trees.
- 2 Angelique fig-trees.
- 2 Violet fig-trees.
- 2 Montmorency cherry-trees.
- 2 Black-heart cherry-trees.
- 2 White-heart cherry-trees.
- 2 True olive-trees.
- 2 Portuguese quince-trees.
- 1 Black mulberry-tree.

- 2 Manured or Spanish sweet chesnut-trees.
- 1 Thin-shelled walnut-tree.
- 1 Thin-shelled almond-tree.
- 2 Maltese raspberry-trees.

Culinary Vegetables.

Potatoes of different varieties	}	To be procured at Brest.
Jerusalem artichokes		
Garlic		
Eschalots		
Sweet potatoes	}	To be procured at the Cape Verde Islands, at the Cape of Good Hope, or in North America.
Yams		

FLOWERING SHRUBS.

Hundred-leaved rose-tree.
Lilach.
Tuberose.

CATALOGUE

OF GOODS AND MERCHANDIZE PUT ON BOARD THE VESSELS UNDER THE ORDER OF M^r DE LA PÉROUSE, FOR THE PURPOSE OF BARTER AND MAKING PRESENTS.

Iron bars	}	Furnished by the port of Brest.
Wrought iron plates		
Iron nails of different sizes		
Bundles of fine iron wire		
Copper in sheets		
Bundles of copper wire		
Lead in sheets		
Clothing of different kinds		
Fishing nets, &c.		
Hatchets of different sizes, and adzes, 2000.		
Joiners' chisels and gouges, 2500.		
Carpenters' adzes, 50.		
Large and small iron hammers, 700.		
Iron wedges for cleaving wood, 550.		
Frame saws, mounted, 50.		
Saw blades, 500.		
Hand saws, 600.		
Pliers, round and flat, and pincers for drawing nails, 1000.		
Knives of different sorts and sizes, 7000.		
Pruning knives, 150.		
Scissors and shears, 1000.		
Steel files, 2400.		
Rasps, 1200.		
Bundles of brass wire, in sorts, 500lb.		
Gimlets, 1000.		

- Wimbles, complete, 100.
Fish-hooks, 9000.
Sewing needles of different sizes, 50,000.
Pins, sorted, 1,000,000.
Looking-glasses framed, of different sizes, 600.
Glasses with feet, or goblets, 1800.
Glass decanters, 200.
China cups and saucers, in gold and colours, 200.
China bowls, ditto, 50.
Coloured glass beads, or bugles, in sorts, 1400 packets.
Coloured glass rings, 2000.
Pewter goblets, 600.
Pewter wash-hand basons, 100.
Pewter plates, 600.
Pewter dishes, 100.
Steels for striking fire, 1000.
Flints for the same purpose, 30,000.
Tinder, 200lb.
Glue, 200lb.
Copper glue-pots, 50.
Bells of different kinds, round and with clappers, 24 packets.
Box, bone, and horn combs, 2600.
Bellows, 24 pairs.
Large barrel organs, 4.
Bird organs, 12.
Dragoon helmets, of copper, with plumes of feathers, and horses tails, 52.
Gorgetts of polished copper, 102.
Heads of polished copper for clubs, 12.
Silver and bronze medals, with the effigy of the king, and an inscription, recording the names of the ships, and the date of the voyage, some with chains of the same metal, others without, 100.
Other medals, of silver and of copper, with the king's effigy, 600.
Coloured glass buttons, set in copper gilt, some diamond cut, others transparent, 96 dozens.

Buttons, gilt, plated, and of polished copper, 720 dozens.

Vermilion, 2000 packets.

Red, yellow, and white feathers, single, and in plumes of different kinds, to the value of 1100 livres*.

Artificial flowers, to the value of 300 livres†.

Fine jewellery, consisting of rows of white, coloured, striped, changeable, and reflecting beads; of drop ear-rings, and of girandoles of different colours and fashions; of necklaces, bracelets, and medallions to be suspended from the neck, of various forms and colours; of rings of different fashions; of perspective glasses, mounted in wood, copper, and fish-skin; to the value of 5000 livres‡.

Ordinary jewellery and trinkets, consisting of magic lanterns; glass smelling-bottles, plain, cut, gilt, and coloured; gilt nails, lenses, multiplying glasses, whistles of bone and of wood; bone cases, engraved, in open work, in filigree, and plain; hearts and rings set with stones, crosses, ear-rings, counters, &c. to the value of 900 livres§.

Tinsel, consisting of galloons, net-work, lace-work, points d'Espagne; Brandenbourgs, &c. in gold, silver, and coloured spangles; to the value of 2800 livres||.

Gold and silver tinsel gauzes, with coloured foil, to the value of 700 livres¶.

Silk ribbons of different colours, 1200 ells.

Remnants of silk, brocade, damask, figured, &c. 312 ells.

Callimanco, of various colours and stripes, 100 ells.

Coloured silk handkerchiefs, 200.

Coloured linen handkerchiefs, 500.

Coarse-cloths, serges, stocking-web, and swanskins, of various colours, 1200 ells.

Scarlet cloth, 100 ells.

Dutch scarlet, 25 ells.

Red fringes, 200 ells.

Scarlet coats, 12.

* £.45 16s. 8d.

† £.12 10s.

‡ £.208 6s. 8d.

§ £.37 10s.

|| £.116 13s. 4d.

¶ £.29 3s. 4d.

Red, white, and blue serge, 50 ells.

Woollen blankets, 50.

Blue and white striped linen, 150 ells.

Remnants of printed calicoes, with large flowers, of different patterns, 850 ells.

Remnants of muslin, 100 ells.

Remnants of linen, 500 ells.

Red tape, 72 pieces.

Thread of various colours, 1200 skeins.

Flock paper, of different colours, large patterns, 80 rolls of nine ells each.

Flowered paper, 80 quires.

An assortment of garden seeds, of different kinds, beside those sent by direction of the sieur Thouin, chief gardener of the royal botanic garden, to the value of 400 livres*, or thereabout.

The whole of the goods embarked for making presents, and for barter, amounts to 58,365 livres†.

And the seeds, trees, shrubs, and plants, sent by the sieur Thouin, to 2,330 livres‡.

The whole of the instruments of astronomy, navigation, natural philosophy, &c.§, and of books bought in France, amounts to 17,034 livres||.

There have been procured from England to the value of about 6000 livres**.

There has been put on board, beside, a considerable stock of essence of spruce, malt, and other preservatives against the scurvy. The stores of this kind, and other things intended to preserve the health of the crews, may be valued at 30,000 livres††.

* £.16 13s. 4d. † £.2,431 17s. 6d. ‡ £.97 1s. 8d. § Not including the three quadrants, which were lent by astronomers. || £.709 15s. ** £.250. †† £.1,250.

The whole of the extraordinaries for this voyage, comprising the extra cost of the provision, in consequence of its superior quality, and the prepared vegetables given in addition to the ship's allowance, will not exceed 150,000 livres *.

In this the table for the men of science and artists accompanying the expedition is not included.

SUMMARY

OF THE INSTRUMENTS OF ASTRONOMY, NAVIGATION, NATURAL PHILOSOPHY, CHEMISTRY, &c. &c. FOR THE USE OF THE MEN OF SCIENCE AND ARTISTS EMPLOYED IN THE VOYAGE OF DISCOVERY.

ASTRONOMY AND NAVIGATION.

THREE astronomical quadrants.

One transit instrument.

Three astronomical clocks, and two stop-watches.

Several astronomical telescopes, night telescopes, and prismatic telescopes.

Five nautical clocks, or time-keepers.

One English pocket watch, or chronometer, for the longitude.

Four reflecting circles, by M' de Borda, for observing the altitudes and distances of the stars.

Three English reflecting sextants for the same purposes.

Four theodolites, or graphometers, with and without telescopes, for measuring angles on shore, and taking plans.

Two sets of chains and staves for the same use.

The steel fathom, with its standard, which were employed for measuring a degree of the meridian at Peru.

£6,250.

Various instruments for measuring the length of the pendulum.

Two English variation compasses.

Two dipping needles, lent by the English board of longitude. The same as were used in Cook's last voyage.

One dipping needle, made by M^r le Dru.

Several other compasses for different uses, such as miners' compasses, and others.

Various sets of artificial magnets, in their cases, for touching the compasses in case of need.

Several half-hour and half-minute glasses.

A box of watchmaker's and other tools, sorted, for the watchmaker accompanying the expedition to repair the instruments.

Several cases of mathematical instruments, for the use of the astronomers and engineers, and other instruments, assorted, for drawing plans and designs.

NATURAL PHILOSOPHY AND CHEMISTRY.

A double-barrelled air-pump, with its apparatus complete.

A plate electrical machine, fifteen inches in diameter, with all its accessories.

A great number of barometers, thermometers, and hygrometers, of different kinds, for various experiments.

A concave burning mirror, one foot in diameter.

Two universal microscopes, invented by the sieur Dellebarre, with their micrometers.

A great number of single lenses, and of compound lenses with two and three glasses.

Two instruments for measuring the depth of the sea.

An instrument for ascertaining the temperature and saltness of the sea at different depths.

Several hydrometers.

Several aërometers.

A large linen balloon, lined with gauze-paper [*papier-joseph*], twenty-six feet high, and twenty-two and a half in diameter.

VOYAGE ROUND THE WORLD.

Three paper balloons, and three of goldbeater's-skin.
Two scaphanders.
A hydrostatical balance, with all it's apparatus.
Phosphoric matches.
Volta's eudiometer.
Fontana's eudiometer.
A chemical apparatus.
Rowland's pneumatic apparatus.
A reverberatory furnace.
An assortment of retorts, matrasses, crucibles, and other chemical utensils.
A silver bowl for chemical operations.
A complete assortment of acids, alkalies, vinegars, calces, and other things, proper to furnish a chemical chest.

BOTANY AND NATURAL HISTORY.

An assortment of boxes for collecting plants.
Brown paper for drying plants, 50 reams.
Nine boxes containing scalpels, pincers, scissors, &c. for dissections.
Eight nets in polished steel and wirework, for catching insects.
An assortment of shrubs, plants, seeds, &c. enumerated in the memoir of the sieur Thouin.
A portable mineralogical chest.

DRAWING.

Several boxes of colours, pencils, &c. sorted.
Assortments of paper of different kinds, for drawing botanical subjects, plans, &c.

CATALOGUE

OF BOOKS OF VOYAGES, ASTRONOMY, NAVIGATION, PHYSICS, NATURAL HISTORY, AND OTHERS, DELIVERED TO M^r DE LA PÉROUSE, FOR THE USE OF THE OFFICERS AND MEN OF SCIENCE EMBARKED UNDER HIS COMMAND.

VOYAGES.

Histoire générale des Voyages, by abbé Prévost.

Histoire des Navigations aux Terres Australes, by the President de Brosses.

Historical Collection of Voyages, &c. by Dalrymple.

Hawkesworth's Voyages, and Cook's three Voyages, in French and in English.

Account of Russian Discoveries, by Coxe.

Voyage des Russes, by Muller.

——— de M. de Chabert.

——— de M. de Fleurieu.

——— de M. M. de Verdun, Borda et Pingré.

——— of Phipps, towards the North Pole.

——— of Anson.

——— de Bougainville.

——— de Kerguelen.

——— de Pagés.

——— of Dampier.

——— de la Condamine.

——— d'Ulloa.

——— de la Martinique, par Chanvalon.

——— en Californie, by abbé Chappe.

——— de M. Sonnerat.

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Thesaurus Zeylanicus.

Herbarium Amboinense.

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Burmanni Plantæ Africanæ.

Bergii Plantæ Capenses.

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Dillenii Historia Muscorum.

Klein, Règne animal.

Forskaol, Descriptio Animalium.

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——— Miscellanea zoologica.

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L'Art de la Pêche.

Conchyliologie de Dargenville.

Conchyliologie fluviatile.

Klein, sur les Oursins.

Pallas, Elenchus Zoophytorum.

Fabricii Elementa Entomologiæ.

——— Genera Insectorum.

——— Species Insectorum.

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NARRATIVE*

OF AN INTERESTING VOYAGE OF THE FRIGATE LA PRINCESA,
FROM MANILLA TO SAN BLAS†, IN 1780 AND 1781.

1780. IMMEDIATELY on my arrival at Manilla, the commander of the frigate, in which I came, disembarked the marines he had brought, stationed them at the port of Cavite‡ for its defence, and appointed me their major. At the same time he ordered me to take the plan of the harbour and its environs. The object of this proceeding was to determine the most favourable situation for placing the vessels intended to oppose the descent of the enemy.

The governor directed the frigate *Princesa* to be equipped for an expedition, which he deemed proper to keep secret. When the frigate was ready for sea, I very unexpectedly received orders to take the command of her. The surprise of this sudden appointment, of which I had not received the least previous intimation, my ignorance of the object of the expedition, and the fear of seeing my mission interrupted by the necessity of some engagement, filled my mind with anxiety. But the governor represented to me, that this commission would crown me with the more honour, in proportion to the importance of its object; that if the enemy should go in quest of me, which no doubt would be the case, the prudence and activity of my manœuvres would be proofs of my ability; and

* The Spanish originals of this narrative, and of the extract of the following, were sent home by la Pérouse. The French translation is the performance of A. G. Pingré: and for the corresponding chart, inserted in the volume of plates and charts, N° 68, and constructed from these narratives and the old journals, the public is indebted to Buache, member of the National Institute. (French Editor.)

† Manilla, in the Island of Luconia, is well known to be the capital of the Philippines. San Blas is a port on the western coast of Mexico.

‡ Cavite is a seaport town, three leagues from Manilla.

that the accomplishment of my commission would render a great service to the king, our common master. Animated by these expressions, I deemed it no small honour, that the governor had fixed on me for such an expedition, under such critical circumstances. I accepted the command; and on the 24th of August I set sail, after having received from the government a sealed packet, containing my orders and instructions, and the port to which I was first to repair. This packet I was not to open, till I was twelve leagues from Cavite.

1780.
August.

24.

On the 25th, finding myself at the distance prescribed, I opened my instructions; by which I was directed to repair to the port of Sisiran* and wait there for my final orders from government, keeping myself constantly on the watch, and ready to repel the enemy, who would no doubt endeavour to intercept me, if they came to blockade Manilla.

25.

The wind slackening, and becoming contrary, prevented my getting out between the islands. In consequence I stood off and on, trying all I could to beat to windward; but I could not stem the current setting from Point Escarseo†, which I found it impracticable to double. Accordingly I was obliged to come to an anchor on the 29th, at two in the morning, near this point, and opposite Port de las Galeras, in twenty-five fathoms, sandy bottom.

29.

At half past three in the morning, on the 30th, the wind came round to the west: but it blew so hard, that I dragged my anchors. I attempted to get under way; but the current would not allow me, and even drove me towards the harbour. I was now in ten fathoms; and I let go an anchor, which became the sport of the tide, and of the wind, which freshened more and more, so that I soon had but five fathoms of water. I let

30.

* Sisiran is a harbour on the eastern coast of Luconia, nearly opposite to Manilla, being only 16' more to the southward.

† This point, Port de las Galeras, and the islands of Tiaco and San Bernardo, are all in the channel or strait, which separates Luconia from the rest of the Philippines.

1780. go another anchor; and by the help of my sheet anchor, which I quickly
 August. got out, I hauled off from the shore, from which I was not much above
 a ship's length distant: and though I still lay within Point Alagican, which
 forms Port de las Galeras, I was able to get under way, but it was at the
 expense of my sheet anchor and another, as well as a sheet cable and two
 other cables, which I left among the rocks*. At nine in the morning I
 doubled the point; and though the wind abated as it came round to the
 third quarter†, by a press of sail I fetched the island of Tiaco, under
 31. which I came to an anchor at eight in the evening of the 31st, to be ready
 to get out of the channel the next morning.

- September On the first of September I again set sail, and at four in the evening
 1. was a quarter of a league to the northward of San Bernardo. Hence I
 shaped my course to pass between the islands of Catanduanes‡ and Luco-
 2. nia. As this course would carry me through the narrowest passage be-
 tween the rocks and that island, at ten o'clock I lay to, and on the 2^d
 at day-break, I found myself two leagues distant from Catanduanes. Crowd-
 ing sail, at half after eleven I had reached the north-westernmost point of
 the island, and passed at a very little distance the last islets near it. Thence
 I steered west-south-west and west, keeping as close to the wind as possi-
 3. ble, to fetch Sisiran. At six in the evening I had nearly reached the port;
 and stood off and on the whole night. On the following day, the 3^d,
 I came to an anchor at two in the afternoon; and moored my vessel as
 securely as possible, waiting for the last orders I was to receive.

Immediately on my arrival, I began to exercise my people in every

* Here I abridge considerably, partly because the particulars would be tiresome and useless, and partly because there are some passages which I do not understand, either from my own ignorance, which, however, I believe not to be the case, or from the fault of the transcriber in mutilating the original.

† The Spaniards divide the horizon into four quarters: the first, from the north to the east; the second, from the east to the south; the third, from the south to the west; the fourth, from the west to the north.

‡ This island is opposite the most south-eastern part of Luconia. Its north point is nearly in the same parallel as Sisiran.

thing that could contribute to our defence in case of attack ; that we might all be expert in the management of our arms, if it should be necessary for us to use them. I wrote also to the governor, to inform him of my arrival, and demand his final orders. 1780. September.

Sisiran is situate in the neighbourhood of very lofty mountains, which render the air extremely humid. They also occasion continual whirlwinds, as I experienced while I lay in the harbour. The constant dampness of the air rendered my crew sickly, and I even lost one of my men.

We were thirty or five and thirty leagues from the nearest villages, to communicate with which it was necessary to climb steep mountains, inhabited by savages, who rendered this intercourse extremely difficult. It was not without much trouble, therefore, that I was able to procure a few of the refreshments, which I conceived would be necessary for us during so a long a voyage.

To replace the three cables I had lost, I requested the alcade, or governor, of the province, to order new ones to be made : which he did, and sent them to me, as soon as they were finished. I likewise requested of him some anchors : but there was not one to be found, throughout the whole extent of his jurisdiction.

On the 10th of November an officer came on board, and delivered into my hands a large box, containing dispatches relating to his majesty's service. The governor general ordered me, to deliver this box as speedily as possible to his excellency the viceroy of Mexico ; and for this purpose to proceed to the port of San Blas, or that of Acapulco, whichever I should judge most expedient. I prepared immediately for my departure : but two successive gales of wind would not allow me to get to sea before the 21st of November. November 10.

To sail from the Philippine Islands to New Spain, the proper time of departure is the month of June, when the westerly winds will carry a ship

1780. to the east of the Marianne Islands. At any other season it would be vain
November. to hope for a prosperous voyage. I was obliged to consider myself, therefore, as about to attempt a navigation altogether new, in latitudes almost unknown. In fact, even if some navigator had before made a voyage analogous to mine, would he have had the same winds? would he have steered the same courses? would he have run down the same parallels, the same meridians, as I? I may presume, therefore, that my route was never before taken by any navigator.

I had nothing more at heart, than faithfully to execute the orders given me, and render my expedition conducive to his majesty's service, and the advantage of his subjects. These sentiments enabled me to surmount the apprehensions I felt from my absolute ignorance of the new route I had to pursue. My knowledge extended no farther than to New Britain; and even in the passage thither I fell in with an infinite number of islands, of which no trace was to be found in any chart.

Mr de Bougainville, who sailed from the east of New Guinea as far as the Cape of Good Hope in the same island, gives us the situation of only two small islands, which he called the *Anachorètes*, and of a group of other little low islands, to which he gave the name of *Mille-îles**. To these he unquestionably assigned their true latitude: but beside these islands, not a day passed without my discovering others, with which I was surrounded, as may be seen by the inspection of my chart. All that I could do, and which in fact I did from the moment I set out on my expedition, was to exercise the most scrupulous vigilance and attention, during the whole course of my voyage, that I might successfully acquit myself of my commission, in spite of the continual risks to which I was exposed.

Had I sailed from a port, where I could have been furnished with every thing necessary for so long a voyage, I should have escaped much distress. My crew were afflicted with diseases more or less severe: our provision,

* Bougainville gave this group the name of *l'Ecbiquier*, not *Mille-îles*.

calculated precisely for six months, was for the most part attacked by insects or in a state of decay: our water amounted only to seventy pipes, and forty barrels, a stock, particularly considering waste, by no means sufficient for so long a voyage: and our rigging was in such a condition, that we could hardly pull a rope without it's giving way. I asked the alcade for some tar, of which we were altogether destitute: but there was none throughout the province, and I was obliged to supply it's place with pitch. Though these circumstances allowed me but little hope of success, my zeal for the king's service suffered no diminution; and I prepared to encounter all the calamities, with which I was threatened by the nature of our provision, and the state of our rigging.

DEPARTURE *from the port of Sisiran, on the eastern coast of the Island of Luconia, in $14^{\circ} 20'$ of north latitude, and $126^{\circ} 34'$ west of San Lucar in California, or $121^{\circ} 20'$ east of Paris, and $20'$ west of San Bernardo in the mouth of the Strait.*

ON the 21st of November I set sail with fresh breezes from the east-north-east and east, which soon increased; and, as they were directly contrary to me, I made several stretches to gain northing, and get to some distance from the island of Catanduanes. These winds carried me into the latitude of $16^{\circ} 14'$, as I found by observation on the 30th. I then steered south-south-east, and had sight of the island again on the 3d of December, bearing south-east by south, distant five leagues. Hence I concluded, that the currents* had carried me $2^{\circ} 16'$ west, notwithstanding the correction I had made of my course to the north-north-west.

In this situation, to which I was confined by the winds, which did not allow me to steer to the south-east, I was assailed by a large and heavy swell, and violent gales of wind, which often obliged me to lie to under

* Beside the currents, the lee-way had no doubt considerable influence on the course steered; but it was apparently from the estimation of this lee-way, that the course had been corrected.

1780. the foresail, suffering every possible difficulty, to get to windward, in order
December. to continue my voyage.

9. On the 9th of December, after having made many stretches, I found myself again in sight of the Island of Catanduanes, and I took from it my last departure, the southernmost point of the island bearing west-north-west 3° west, distant ten or twelve leagues; which gave me $13^{\circ} 24'$ for my latitude, and $122^{\circ} 26'$ longitude east of Paris, $46'$ east of San Bernardo.

14. We had then pretty fresh breezes from the third quarter, of which I availed myself to run to the eastward till the 14th of December, when the winds came back to the east-north-east, east, and east-south-east. This change obliged me to steer my course between the south and south-east.

18. On the 18th, according to one of the charts by which I directed my course, I ought to have been seven leagues to the eastward of the island called the Martyr; and between the 20th and 21st I should have sailed over that named the Triangle: according to another chart, on the 19th I was near the Island of Yap, the largest of the Carolines, and on the 20th, among the Pelew Islands; but we saw none of these, though the short and heavy sea we met with must have been owing to the proximity of the Carolines, or New Philippines; as they are laid down on the French chart.

29. On the 29th I crossed the line, and entered the southern hemisphere. The winds then blew from the third and fourth quarters; at times tolerably strong, but frequently interrupted by calms, which incommoded us much by the excessive heat with which they were accompanied. I directed my course to those points of the first and second quarters of the compass which were nearest to the east; still keeping in view gradually to gain southing, in order to fall in with the westerly winds prevailing in higher latitudes. While steering this course, we observed several large trunks of trees, birds of different kinds, boobies, and others called *dominicos*.

In this course I intended to reconnoitre the Mille-îles, the north-east-

ernmost of which Bougainville places on his chart in $1^{\circ} 10'$ of south latitude, and * east of Paris; and in fact I got sight of them on the 7th of January. They stretched from the 38th degree of the second quarter to the 9th degree of the third †. The latitude of that which lies farthest to the north-east was precisely the same as laid down upon the chart; but the longitude, according to my reckoning, was $141^{\circ} 12'$ east of Paris.

1781.

January

7.

I determined to run along these islands as close as possible. I took a number of bearings, which, combined with the ship's reckoning, enabled me to determine with the greatest nicety the situations of twenty-nine of these islands, which we discovered. No doubt there were many others to the southward, which we were unable to discern. It is impossible to mark the extent of each of these islands on the chart, hardly any of them being a league in length. They are all low, and covered with trees. Some are surrounded with reefs, by which they are connected to the islands adjacent. The sea breaks on these reefs; but the breakers are not perceptible at any great distance. I continued to draw nearer these islands, so that I passed within two miles of the northernmost. At seven in the evening I perceived several fires on those that lay farthest to the east; not without astonishment, to think that such little spots of land should be inhabited.

Leaving these islands, I steered east by north, and on the 8th we discovered two islands, bearing south 3° east, distant five or six leagues. These I named *los Ermitanos*, or the Hermits: and on the evening of the same day we saw the *Anachorètes* to the north and the west, distant five miles, exactly in the latitude assigned them by Bougainville. At the same instant we saw four little islets to the east. At midnight I passed these to the south, within a league of them. I named them *los Monges*, or the Monks.

8.

From this place I bore away for North Cape in New Britain: but the

* The longitude is left blank in the manuscript: it is $139^{\circ} 30'$ according to the chart of Bougainville; the Mille-îles being manifestly the same with his Echiquier.

† They stretched, therefore, from east 38° south to south 9° west.

1781.
January
10.

dawn scarce appeared on the 10th, when I discovered other islands to the south-south-east *. This day and the following I ran along the westernmost at some little distance. I did my utmost, by taking bearings, to ascertain it's true situation; and I can assert, that it's northern shore extends eleven leagues. The island is no doubt proportionably large, for beyond the plains, which reach to the sea-side, several tolerably high hills are to be seen, which appear in perspective in the chart. Beyond this island are four other low ones in succession. They are covered with trees: their shores are bold, and free from reefs; and I doubt not but good anchoring grounds might be found in the channels between these islands, where vessels might lie sufficiently sheltered from sea and wind.

11.

On the 11th, the inhabitants of these islands, seeing me within two miles of the easternmost point, came off in their canoes, to the number of twelve. I saw several others which did not leave the shore. Having some curiosity to learn their disposition, I brought to. They came alongside, but would by no means venture on board; and pressingy requested of us food, at the same time entreating us to anchor among their islands. We threw them from the ship a few cocoas and pieces of biscuit, on which they fell greedily, almost fighting over them: but when they saw a net with some vegetables hanging over the stern, they tried every effort to cut it away with long wooden axes. These were convincing proofs of their miserable condition; and far from hoping for any refreshment from these islanders, I perceived their necessity was greater than my own. I filled my sails, therefore, obliged to abandon them to their wretched state. There was no perceptible difference, to my eye, between these people and the negroes of Guinea: their colour, hair, lips, eyes, and every thing appeared the same. Their only weapons were arrows, rudely pointed with flints, but without bows. They had also some fishing nets, with which no doubt they procured the principal part of their subsistence.

* In the manuscript it is *sudoeste*, south-west, which unquestionably should be *sudeste*, or *sud-sueste*, south-east, or south-south-east, for it is evident from what follows, that the island could not lie at this time to the westward of the vessel.

Pursuing my course when I quitted this island, to which I gave the name of *don Josef Basco*, I discovered on the same evening six others. Of the two southernmost, I named the one to the west *San Miguel*, and that to the east *Jesus Maria*. Their size is no doubt greater than appeared to me from the bearings I took; for their hills are very lofty: so that probably the distance I was from them did not allow me to discern the extent of the coast.

1781.
January.

At the same time I ran along the shore of two other islands, at the distance of two miles: the westernmost I named *San Gabriel*, the easternmost *San Raphael*. Between these and the former two were two very small ones: that to the north I called *Isla Baxa*, or Flat Island; that to the south, *Isla de Horno*, or Oven Island. At midnight, steering still east, I found myself to the north of three islands, to which I gave the name of *los Tres Reyes*, or the Three Kings.

On the 12th I passed a very small islet, six leagues off, in the 38th degree of the third quarter, bearing south 38° west. 12.

At half after one the same day we discovered another island to the north-east 3° east, distant eight or nine leagues. It offered to our view a very lofty mountain; and suspecting, that it was the Island of Matthias, which the French chart places to the north of New Britain, I directed my course east-north-east, to get near it, and satisfy myself of it's situation. At six in the evening the mountain bore north 22° east, at the distance of six or seven leagues; and it's situation, ascertained from the bearings we took, left me no doubt, that it was the island of Matthias.

I continued to steer the same course, in order to get sight of *Ile Orangeuse*, or Stormy Island, which is laid down on the French chart farther to the east. This island has certainly received a very proper appellation; for we were exposed the whole night to squalls of wind and a high sea. On the 13th, however, notwithstanding the mists and frequent showers, which came on from the dawn of day, we discovered another island, bearing 13.

1781. north-west by north, at the distance of seven leagues, which appeared to
January. us smaller than Ile Orageuse is represented on the chart; but it's distance, and the obscurity of the horizon, may have induced us to suppose it less than it really was. At length I concluded, that it must either be Ile Orageuse, or some small island very near it.

As the bearings I took gave me $1^{\circ} 23'$ for the latitude of the southern point of the Island of Matthias, which the French chart places in $2^{\circ} 10'$, I judged it most proper to reject the authority of the French geographer, and lay down the island on my chart according to the latitude which I calculated from the observation I had made at noon, and which I believe to be very accurate *. I applied the same correction to Ile Orageuse; as the situation of these two islands, being so near each other, must have been affected by the same error.

On comparing my longitude by account of the Island of Matthias, $144^{\circ} 20'$ east from Paris, with that of $145^{\circ} 35'$ assigned it on the chart†, I found my reckoning, according to the chart, must be $1^{\circ} 15'$ too far west. Supposing, that the navigators who discovered this island had accurately determined it's distance from the Cape of Good Hope in New Guinea‡, I corrected my longitude, which I had calculated at noon $143^{\circ} 39'$ east of Paris, to $144^{\circ} 54'$, which it must be according to that of the Island of Matthias. This correction I applied proportionally to the situations of the islands I had before discovered; and I took my departure anew from the longitude of $144^{\circ} 54'$.

The same day, January the 13th, we descried an extensive coast. The horizon in the second and third quarters (all the southern half) was loaded

* The latitude of the southern point of the Island of Matthias is $1^{\circ} 38'$ on Bougainville's chart.

† On the same chart the longitude of this point is $145^{\circ} 10'$: and Ile Orageuse is represented as two, the centre of the easternmost being placed in latitude $1^{\circ} 45'$, and longitude $145^{\circ} 37'$. Bougainville saw these two islands, but did not examine them.

‡ Modern navigators would rather have been guided by the distance of this island from Cape St. George, the geographical situation of which is better ascertained than that of the Cape of Good Hope in New Guinea.

with heavy clouds, mists, and whirlwinds. If the weather brightened, it was but for a moment, so that it was impossible for me to ascertain what land I saw. I believe, however, that it was the coast of New Britain, both because we continued for some days to discern points of land, which could belong only to a large island, or continent; and because, as we ran along the coast, we perceived very lofty mountains, which are extremely rare in small islands.

In the afternoon of the 14th we saw a lofty mountain to the south-west, and a shore stretching pretty far both to the west and to the east. There could be no doubt, but this was part of the coast of New Britain. I could not determine exactly how it trended, being twelve leagues distant. At the same time I passed near three islands, bearing from me south by west. The northernmost, which I named *San Francisco*, was two leagues and half distant: that in the middle, I called *San Josef*: and to the third, which was at the distance of seven leagues and half, I gave the name of *San Antonio*. After we had passed these, I saw at midnight a small island, in the 10th degree of the second quarter (east 10° south), which I called *San Pedro*.

On the 15th we saw two islands, bearing at noon south-west 8° south, distant ten leagues. The westernmost I named *San Lorenzo*; the easternmost, *San Blas*.

From the 15th to the 17th the winds were light and variable from the first quarter to the fourth. On the 17th we saw a small island, to which I gave the name of *San Jacinto*. It bore from us 58 degrees of the third quarter (west 32° south), distant ten leagues.

On the 18th we discovered three other islands, eight miles off, one of which lay north and south. The one to the west I named *Santa Rosa*; the largest, *Isla del Refugio*; and the least, which was very near it, *la Magdalena*. The same day we saw to the south-west of *Isla del Refugio* a coast covered with very lofty mountains. I conjectured myself to be twelve

1781. leagues distant from the shore, in the direction of 65° of the first and third
January. quarters (that is, it bore from the ship south 65° west) : and this was the
only mean I had of determining the situation of the island.

At first I doubted whether this land did not make part of New Britain : but I was afterwards convinced, that it was the island of *St. Jean*, which the French chart represents as a large island, and which it places in the same parallel in which I saw this * ; particularly as we had seen an infinite number of little islands since the Island of Matthias, but not one which it's latitude and distance from this island would allow us to take for *S^t Jean*.

19. At sunrise, on the 19th, we saw two very low islands, each of which bore north-west and south-east, distant six leagues. They were parted by a narrow channel, which opened to the south-west. I named them *los Caimanes*, or the Alligators.

The same day, at nightfall, we perceived two islands to the south. The nearest to us, which was very small, I named *Santa Anna* ; the other, *Santa Barbara*. The coast of this, according to the bearings I took, extended seven miles.

20. On the 20th, at daybreak, the centre of a large island, to which I gave the name of *Don Manuel Flores*, bore from us south 5° west, distant 13 leagues. We observed on it a pretty high mountain. That part of the coast which we saw ran east-south-east and west-north-west for the space of six leagues.

At eight in the morning we got sight of nine islets, which I had no

* I should like to know what French chart it was, by which our navigator directed his course. The Island of *S^t Jean* is placed, according to a chart of Fleurieu, in latitude $3^\circ 45'$, longitude $150^\circ 32'$ east of Paris : but according to Carteret's Voyage, the French 4to. edition, the chart of which is on a large scale, it's latitude is $4^\circ 19'$, longitude $153^\circ 3'$ east of Greenwich, or $150^\circ 43'$ east of Paris. Carteret had reconnoitred this island. The author of *Découvertes des Français*, p. 286, decides in favour of latitude 4° , longitude $151^\circ 30'$ east of Paris.

doubt were the Ontong-Java of the French chart. The latitude of these islands was precisely the same as the chart assigns to the centre of Ontong-Java. I stood towards these islands, in order to get as near to them as possible; and I observed they were surrounded by a sand-bank, which was not discernible at more than two miles from the shore. Near the edges of this bank, at a very little distance from it, a few small rocks appear here and there above the water.

1781.
January.

On the south the bank leaves a narrow opening, opposite which we had an observation, and found our latitude to be $4^{\circ} 53'$. We were not more than two cables' lengths from the entrance of it: and the other extremity is a bay, where the water is perfectly smooth, and which would afford a secure harbour for any ship wishing to take in wood or water. This bay is sheltered on the north by the islets. I named it *Puerta de la Princesa*. On the chart is a minute plan of this harbour: for we passed by it near enough to answer for the accuracy with which it is drawn*.

Upwards of sixty canoes came out from these islands, which are not a mile distant from one another, and approached us within a short musket-shot: but as the wind was fair, I thought it incumbent on me not to waste time in waiting for them. Accordingly I filled my sails, and stood on my course; while they returned to their islets, on which it appeared to me impossible for human beings to find subsistence. We observed a pretty considerable number of palm-trees, which no doubt produce fruit, and thus, with the help of fishing, enable these islanders to drag on a wretched life.

* Ontong-Java (or Jaba, which is the same thing to the Spaniards) was discovered, as it is said, in 1616, by le Maire and Schouten. They reckoned twelve or thirteen islands; but they were far from having so near a view of them as our navigator. At their distance, they could not discern very low necks of land, joining two parts of one island, of which consequently they would make two. In 1767 Carteret discovered in the same latitude nine islands, which he supposed to be the Ontong-Java of Schouten. These islands extended from north-west by west to south-east by east, about fifteen leagues; and one of them was of considerable size: but Ontong-Java does not extend three leagues, and all the islands that compose it are very small. Notwithstanding this, I shall endeavour to prove, in another place, that the nine islets of our navigator, those of Carteret, and those of le Maire and Schouten, are one and the same groupe, but different from the Ontong-Java of Tasman.

1781. After having quitted Ontong-Java, I continued my course, with gentle
January. and favourable winds during the day, but violent in the night; which obliged me to look out with the strictest attention, and to inculcate equal vigilance upon my crew. They were sufficiently aware of the extreme risk we ran: and in consequence, no sooner did an island appear above the horizon, but notice was given of it, the island was reconnoitred, and the danger was past.

22. We sailed on without having sight of any land till the 22d, when, the night being dark, at ten o'clock, we heard the sea roaring dreadfully to the north-east, and saw it broad on the ship's quarter, and at no great distance, white with foam. We were obliged to stand to the south-west, till we were out of hearing of this shoal, which I named *Roncardor* or the Snorer*; when I laid the ship's head to the east again, as before.

If the various incidents which thwarted my voyage be considered, it will be easy to form an idea of the constancy, with which I invariably endeavoured to fulfil two objects, directly opposite, yet equally indispensable. My commission demanded the greatest dispatch, and consequently impelled me to crowd sail, without losing a single moment. On the other hand, the tornadoes in the vicinity of the line occurred only in the night; when the winds freshened extremely, the sky became dark and gloomy, the thunders rolled, and the lightnings flashed. During the day the wind was nearly calm, so that I could make little progress except by night. I met with islands in the day: I met with islands in the night also. Prudence, no doubt, would have advised me, not to expose myself to dangers, which in an instant might have completely frustrated the end of my voyage: but this would have occasioned a delay, probably prejudicial to the object of my commission. I resolved, therefore, to supply the want of inactive prudence by the most vigilant attention to every obstacle that might occur; and to avail myself of the winds, as long as they proved favourable.

* Fleurieu thinks, that this *Roncardor* is the same with the Candlemas Flats of Mendaña, which is not improbable.

All the remaining part of January the winds were light, and blew from the north-north-west to the north-east, so that I could steer no course but east, or those points of the second quarter nearest the east. Thus my latitude to the south was increased, without any possibility of my getting to the north, the wind constantly blowing from the first quarter, except a few squalls from the fourth and the second quarters, of which I availed myself to get nearer the line: but calms were so frequent, that the longest run I ever made in four and twenty hours was no more than seventy miles.

1781.

January.

When February commenced the calms became more constant. From the 6th to the 17th our longest day's run was forty miles: in general it was but twelve or fifteen. These calms retarded us much. In vain I endeavoured to get to the north of the line, hoping to double the shoals of Saint Bartholomew on the west*: the light breezes from the north, north-north-west, and north-north-east, obliged me to steer a course in the fourth quarter so near the west, that I lost the easting I had gained with such numerous risks. This induced me to resume a course in the first quarter, hoping that the easterly winds would soon facilitate my passage across the line.

February.

As my voyage was thus daily retarded, I had taken the precaution, ever since the 20th of January, to deduct two ounces of bread from each man's ordinary allowance, beside the diminution of one ounce in the pound, which I had made from the moment we set sail: but on the 16th of February, finding no alteration in the weather in our favour; and considering, that we had been victualled only for six months; that seventy pipes and forty barrels of water, which had been put on board, were far from sufficient for that period of time; that, being according to my reckoning in latitude $3^{\circ} 32'$ south, and longitude $174^{\circ} 8'$ east of Paris, I had hardly provision for three months, and a very inadequate stock of water;

16.

* Here I am forced to guess, as the manuscript affords no rational meaning; but I believe I am right in my guess.

1781. I concluded, that it was necessary to diminish the allowance still farther,
February. which I did that very day, by reducing it to two thirds.

But this was not all : our distress was infinitely heightened by the innumerable quantity of cockroaches *, with which our ship was infested. The biscuit weighed much less than when it was put on board : yet the state of our water disheartened me still more ; we frequently found the casks empty, and the water not only leaked out, but the casks themselves rendered unserviceable, for the cockroaches had eaten holes through the staves, into which you might put two or three fingers.

Reflecting seriously on all these circumstances, I conceived it impossible to continue my course towards the north of the line, without stopping at some island, where I could replace the water I had lost. To reach the Ladrões in time for this, was what I could not expect. Accordingly I resolved to make for the islands of Solomon, which I reckoned lay a hundred and seven leagues to the eastward. I hoped the northerly winds would allow me to put in at these islands, from which I could reach the presidency of Monterey with more speed and security.

20. I stood, therefore, towards the Solomon's Islands : but the winds of the first quarter near the north, blowing without interruption, drove me imperceptibly to the southward. On the 20th of February I found myself seventeen leagues to the west of Cape Santa Cruz or Guadalcanar. We then began to feel the breezes from the east and east-north-east, which made me lose all hope of putting into the Solomon's Islands, or even getting sight of them. Thus, finding myself in the latitude of 12° south, I felt myself constrained to proceed to the southward, persuaded that I should fall in with some islands, where we might obtain relief from the extreme want to which we were reduced. At the same time I hoped, that, after we had

* The cockroach, or *blatta americana*, is a coleopterous insect, not very unlike the may-bug, but larger and flatter. It devours or defiles every thing. In the Caribbee Islands, it is said, they call it *ravel* : but the cockroach of the Isle of France [perhaps the *blatta gigantea*] appeared to me much larger than the *ravel* of St. Domingo ; in other respects they are similar pests.

reached the latitude of 20° or 22° , we should find the wind favourable for running to the eastward; which I could not promise myself, if I stood to the north, unless I got as high as 44° or 46° , constantly keeping close to the wind, which would have made me lose an infinite deal of time: and even if I did this, I should be obliged to put into the Ladrones.

1781.
February.

In consequence of these reflections, and others which incessantly tormented me, I resolved to steer a course in the second quarter (between the east and south), keeping as much to the eastward as the wind would allow me. On the 26th of February I saw a small island, and stood towards it, in the hope of being able to come to an anchor there, and procure water. The crew leaped for joy, as if this island were to put an end to all their restrictions. Their hilarity equalled the distress to which they had been reduced; but it was of short duration: for when we arrived within two miles of it, we saw clearly, not only that there was no anchorage, but even that a boat could not land on it. It was beside perfectly barren: on it's mountain, which was by no means small, not a single tree was to be seen. This island, from the anguish of our disappointment, we called *Amargura*, Bitterness.

26.

On the 27th we discovered an island right a-head, on which was a lofty mountain, appearing scorched at the summit, but exhibiting a pleasing verdure on its sides covered with trees. We distinguished on it many cocoa-trees, which increased our desire to land, but the faintness of the wind did not allow me to approach nearer than within a league of it, on the western side. From this side several canoes put off with cocoa-nuts and bananas; and a barter presently commenced. The Indians, full of confidence in us, came on board. Their chief expressed the warmest friendship for us. He danced on the deck, and sung songs. Among other presents he gave me a kind of large counterpane, resembling blotting-paper, composed of two or three leaves placed upon one another, to give the texture more firmness. I was not behind hand with him in civility, and he retired well satisfied. He told me, that the island was called *Latte*; that he was it's chief; that it abounded in fruits of different kinds, and fresh

27.

1781. water; and that I should find a good bottom. In fact, however, I saw no
February. place where I could be sheltered.

In the stretches we made to find a convenient anchorage, we discovered to the east-north-east, at the distance of twelve leagues, other islands, less lofty, but of greater extent, with several channels between them. The wind was faint, but favourable for them. The prospect of these islands promising me a more abundant supply, I stood towards them.

March Calms, and occasional light contrary winds, continued a few days from
1. the 1st of March; but at length, on the fourth, after a few tacks, I entered a passage between these islands to the north-west, and anchored in forty-five fathoms, at a very little distance from the shore. From our anchorage we could see, within a bay, houses, numerous plantations of banana and cocoa trees, and, what we had most at heart, very satisfactory appearances of water. We perceived, too, within the group of islands, several harbours, in which ships might lie secure from the wind and sea; so that we persuaded ourselves our melancholy situation was at an end.

5. The same day, in the evening, we dragged our anchor; and as the bottom immediately deepened considerably, I got an offing while heaving the anchor in sight, so as to be ready to let it go again. As soon as it was gotten up, I tacked for the port, and on the 5th, at day-break, anchored in 38 vares * (about nineteen fathoms), on a bottom of sand and stones, within two cables length of the shore, in the bay where I saw the houses the day before.

During the time I lost in approaching these islands, fifty or a hundred canoes came alongside every day, bringing hogs, fowls, bananas, cocoas, and sweet potatoes, which tasted like milk-pap †. Some of these potatoes

* I think we should read thirty eight fathoms.

† The Spanish word *popa*, or *papa*, signifies a kind of panada, made with milk, and given to children. I presume, however, it will be deemed very excusable, if I suspect a little exaggeration in the length ascribed to these sweet potatoes.

were five vares (fifteen feet) long and as big as a lusty man's thigh. The least weighed three pounds. They offered us likewise stuffs woven from the bark of the palm-tree, others of a finer sort, and some of those mantles or counterpanes resembling blotting-paper, which I mentioned above. They set a great value on these counterpanes in particular. All our traffic was carried on over the ship's quarter. The islanders were desirous of hatchets, adzes, and other edge-tools, in exchange for their fruits and manufactures: but I prohibited the giving them any, under pain of the severest punishment; and I believe my orders were obeyed. My people cut their shirts, trowsers, and waistcoats into strips; and for these they procured hogs and other refreshments. In consideration of this provision, I stopped the allowance of meat, and reduced that of bread to half.

1781.
March.

The Indians, who came on board, were urgent with me to enter the interior of their archipelago. Each pointed out his own island; and assured me, that I should there find water, and every thing I wanted. The *equis*, or captains, testified the greatest friendship for me as they arrived; and I endeavoured not to remain their debtor. Several sat down at my table; but they would eat nothing except their own fruits. I imagined, that these people were divided into a great many castes, or tribes, from the number of *equis*, who exercised command over them: but I observed, that they seemed to live in great harmony.

We were also visited by the women, whose countenances appeared by no means disagreeable. Their clothing consisted in a kind of petticoat reaching from the waist to the feet; and the men were dressed in the same manner. I admired the handsome portliness of these: some, whom I measured, were six feet four inches high, and stout in proportion; and they were by no means the tallest among them. Thus much is certain, that the least of them equalled the tallest and stoutest of my crew. These islanders in general are tall and robust.

As soon as we had cast anchor, I received a present of fruits, sent from the *tubou*, and delivered to me, as I was given to understand, by his son.

1781. What could this name of tubou, which the equis repeated with particular
March. affection, signify? I thought, at the time, that it probably meant the
equi of the island near which we were, who must have some pre-eminence
over the rest, from the respect with which they spoke of him. However
it might be, I received his son in the best manner possible, with the view
of securing his friendship, that I might experience no difficulty in get-
ting water, but that our arrangements might be promoted by all his
authority.

By eight o'clock in the morning we had more than a hundred canoes
round the frigate. The cries of the people who were in them, and car-
rying on their traffic, were so shrill and loud, that it was impossible to
hear one another speak on board. They informed us, however, about this
hour, that the tubou was coming to pay us a visit. When he drew near,
all the canoes on the starboard side retired. I received him with all possi-
ble civility. His age and enormous bulk had deprived him of sufficient
agility to get up the ship's side; so that the equis, whom I had hitherto
considered as so many petty kings, assisted him with their shoulders, while
he ascended the ladder. He was followed by his wife, who exceeded in
beauty every other woman of the island we had seen; and I could almost
have sworn, that she was the daughter of some European, she was so
strikingly graceful. As she was at most not above twenty-five, youth still
added to her charms. They both sat down on the *banco de paciência*, or
watch bench; and all the rest, making a profound prostration, kissed the
tubou's feet. He brought me as a present a canoe of sweet potatoes.
In return, I put on each of them a scarf of flame-coloured silk, reaching
from the shoulder to the waist, with a dollar, bearing the effigies of our
august sovereign, suspended to it by a carnation ribband. At the same
time I distributed several reals*, with the same impression, as irrefragable
proofs to future times of our having touched at these islands. The sub-
ordination of the equis to the tubou was so great, that not one of them

* The dollar is equal to twenty reals: the real is worth rather more than two pence halfpenny of
our money.

dared to sit down in his presence. Even his son, who had assumed an air of majestic gravity before his arrival, was now as respectful as the rest. I may say with truth, that the tubou scarcely deigned to honour them with one or two words. I led them to the great cabin; when they were struck with admiration at sight of the equipment of the frigate, and the other things I shewed them. At length, highly gratified with their reception, they departed, after giving us the most cordial assurances of the strictest friendship, and after a thousand kisses and embraces bestowed on me by the old man.

1781..

March..

To prevent the disorderly behaviour, in which sailors often indulge when they get ashore, I gave out orders, threatening the severest punishment to every one, who should in any way offend the islanders.

At the same time I cautioned my people to be on their guard on all occasions; and to give the Indians an idea of the power of our arms, I fired a few cannons against the rocks. The splinters which flew about from the force of the balls, filled them with consternation, and they begged me not to repeat the firing. This discharge, made in the presence of twelve or fifteen hundred persons, produced the desired effect: it inspired them with dread of our weapons, and I hoped they would not reduce me to the necessity of employing them in earnest.

On the 6th I took fifteen of my men, well armed with muskets, pistols, and cutlasses, and went on shore with them in the long-boat, provided with four swivels. We landed on the beach, which I found covered with men and women. Making them retire a little, I drew up my men under arms within ten yards of the boat. The swivels were pointed against the crowd of Indians, ready to be employed if we perceived any hostile movement.

6.

The son of the tubou offered to conduct one of my people to a spring of fresh water; but on his telling him, after they had walked half an hour, and ascended a little hill, that he had as much farther to go, my messenger

1781. returned to the sea-side, where I waited for him. In the mean time I had
March. directed the men to dig a well on the shore, and when they got to the level of the sea, water came, but it was not drinkable. I then ordered another to be dug twenty yards from the beach; as I wished to avoid the necessity of weighing anchor, and running with the vessel farther into the midst of the archipelago, where I was assured I should find water; for this would have taken me some days, and I wished not to lose any time.

7. On the 7th I went in the long-boat, with a detachment well armed, to one of the places where I was told I should find water; but this water was too far from the vessel. I filled a few casks, and returned to the harbour, with intention to resume the digging of the well. For this purpose I landed the same day, with the former precautions, and such progress was made in the well, that it was left in a state to yield water the next day.

The tubou, or king, came to visit me with a grand retinue. The equis were drawn up in two files; the most aged and venerable of them walking next to the king. As a testimony of his friendship, the tubou caressed me greatly, and embraced me a hundred times. His retinue sat down, forming a large circle, in the order in which it came. Two carpets of palms were brought. The king sat down upon one; and made me sit on the other, on his right hand. All kept a profound silence, except that those, who were near the tubou, and whose great age rendered them no doubt the most respectable, faithfully repeated every word he uttered. Presently some roots were brought, with which was made, in a sort of wooden troughs, a drink, that was no doubt very bitter, if we may judge from the gestures of those who drank of it. This refreshment was served in vessels made of leaves of the banana tree. Three or four young Indians offered it first to me and the tubou. I did not taste it; the appearance of it was too disgusting. The person who sat nearest to the tubou pointed out those who were to drink of it; and none was offered to the rest. Sweet potatoes roasted, and bananas perfectly ripe, were then set before me; and of these I ate. A little after two canoes appeared, loaded with the same kinds of provision, to be distributed among my men.

After this refreshment, the tubou returned to his house. I paid him a visit, leaving the first pilot at the head of my troop, with orders to let no person approach, under any pretext whatever.

1781.
March.

The tubou gave me the best possible reception. The queen immediately made her appearance, preceded by eight or ten girls of sixteen or eighteen years of age. They all waited upon her: on some she leaned, while others drove away the flies, by which she might have been incommoded. She was wrapped in several mantles, which added greatly to her size; and received us with a smile, graciously repeating the word *leelay*, *leelay*, which signifies *welcome*, or *I am glad to see you*. After this first visit, I made the tubou very few others, for fear he should strip himself of all his clothes, to put them on me, which is deemed a singular favour. The king gave me two large giltheads*, and one of his weapons, which was nothing but a staff of *acana*†, painted of various colours: and I returned on board, hoping to be able to procure water the next day.

On the eighth in the evening our well was finished, and we drew water from it, to the great astonishment of the Indians; but it was so bad, that we could not think of taking it on board.

8.

The same day I paid a second visit to the king and queen, who failed not to send me every evening a large quantity of sweet potatoes roasted, considering, without doubt, the great number of persons I had to supply with food.

Convinced of the badness of the water near the shore, and having no hope of finding any at a greater distance on account of the proximity of the mountain, I weighed anchor, and sailed for another bay, a league and half or two leagues distant. As soon as one of the anchors was out of the

* *Dos dorados*. The Spanish word *dorado*, used as an adjective, signifies *gilded*: as a substantive, I know no other meaning it has than that of *gilthead*, a well-known fish.

† I do not know what wood this is.

1781. ground, the cable, which had never been used before, parted, all the strands
March. having given way. On examining the cable, it was found to be rotten and unserviceable throughout. I swept for the anchor, but in vain: the water was too deep to allow me any hope of finding it very quickly, and I could not remain long in search of it.

The new bay to which I repaired was perfectly secure against both wind and sea, as I experienced a few days after, when it was very foul weather in the offing, with the wind from the north and north-west, of which we felt nothing but a few puffs. I anchored in thirty-two fathoms, on a bottom of sand and stones, under shelter of some hills, which formed the north side of the harbour, - All around us the bottom was rock.

9. On the 9th we began to get in water. It was within five yards of the shore; and the business proceeded faster than I had any reason to hope, the equis having ordered the Indians to roll our casks. When the tubou arrived, no person dared issue any order.

10. In this manner we were employed on the 10th, 11th, and 12th, when we had taken on board all the water we wished. A great number of canoes, however, came off to the ship to barter; and the confidence of the natives in us was such, that many of them slept on board.

12. During this period the king had invited me to a feast, which he intended to give; and when I landed on the 12th, I saw, in the thick wood near the harbour, an extensive circular space, so completely cleared, that there was not a stump of a tree left. Soon after, the Indians repaired to the tubou's house, two and two, carrying on their shoulders long poles, from which were suspended abundance of sweet potatoes, bananas, coconuts, and fish. The tubou ordered all this provision to be carried to the spot of ground recently cleared, where it was piled up in a square heap two yards high.

The equis and venerable elders came to conduct the tubou, who took

me by the hand, and we repaired together to the vast circle, where two thousand Indians waited for us. We sat down on palm-carpets prepared for the purpose; and all the people did the same, observing however the distinction of casts or families, one not intermingling with another.

1781.
March.

The king then offered me all this provision, and sent it to the long-boat, which it completely filled. When the bearers of it had returned to their stations, profound silence was observed, when the king spoke. Those to whom age or rank gave a right of sitting near the king repeated all his words.

I knew not what would be the end of all this; however I ordered my people, with the first pilot at their head, to be ready with their muskets and pistols, to fire if they perceived any hostile movement.

Immediately a strong robust young man stepped from the ranks, his left hand placed on his breast, and striking his elbow with the right. Going round the circle, he played several gambols before the groups that were not of his tribe; till another advanced from one of these groups, making similar gestures; when they began to wrestle, closing with each other, and striving with such eagerness, that their veins and tendons appeared ready to burst. At length one of the combatants fell with such violence, that I thought he would never have risen again. He did rise, however, covered with dust, and retired without daring to lift up his eyes. The conqueror came to do homage to the king, and those of his tribe sung; but whether in honour of the victor, or opprobrium of the vanquished, I am unable to say.

These wrestling contests continued two hours. One of the persons engaged in them had an arm broken; and I saw others receive dreadful blows. Before the wrestling was over, other champions presented themselves, their hands and wrists bound round with thick ropes, which served them as cestuses. This combat was far more terrible than the wrestling. At the first onset the combatants struck one another on the forehead, eyes,

1781. cheeks, and all parts of the face; and the bruises they received served
March. only to irritate their rage. Some were knocked down at the very first blow. The spectators beheld this engagement with a degree of respect, but all were not admitted to it indiscriminately.

Some of the women, particularly those who attended the queen, were present at this festivity. I found them very different from what they had hitherto appeared. I had thought them not disagreeable: but this day they were adorned in their best attire; their mantles neatly folded back, and fastened with a knot on the left side; rows of large glass beads round their necks; their hair arranged in a graceful manner; themselves washed and perfumed with an oil of a pleasant smell; and their skins so clean, as to be free from the least grain of dust. They engaged all my attention, and appeared to me much handsomer than before.

The king gave orders for the women to fight with their fists as well as the men. This they did with such animosity, that they would not have left a tooth in each other's head, if they had not been parted from time to time. This spectacle gave me pain. I requested the king to put an end to the combat: he acceded to my wish: and all the company applauded my compassion for the young girls.

The tubou then ordered an old woman, who had a cruet of tin about her neck, to sing; which she did incessantly for half an hour, accompanying her song with action and gesticulation, so that she might have been taken for an actress declaiming on a theatre.

At length the entertainment ended, and we returned to the king's house. There I found the queen, who received me with the usual marks of kindness. On my asking why she was not present at the sports, she informed me, that she received no pleasure from such combats.

The ties of friendship being now drawn so close between us, that the tubou even called me his *hoxa*, that is to say his son, I took leave of him

and the queen, and returned to the boat. The shore was covered with Indians, who were eagerly caressing my people, for having condescended to be present at their festivity. The victors even took me on their shoulders and seated me in the boat. The tubou, who saw the multitude from his house, and knew how much uneasiness I felt, when the Indians mingled with my men, ordered his captains to drive away the islanders, and so great was his anger, that he came out himself armed with a club, and belaboured indiscriminately all who fell in his way. The crowd fled into the wood: but two, who had been most severely handled, were left for dead on the spot: whether they recovered or not I never heard.

1781.
March.

There was nothing now to prevent me from putting to sea, which I resolved to do on the 13th: but a gale from the north and north-west, which came on that day, and blew almost right up the channel through which I was to get out, would not permit me. The wind blew harder and harder; yet at our anchorage the sea was barely a little rougher than ordinary. Notwithstanding this, and though I had three anchors down, one of my cables gave way, and I was left with the sheet anchor and small bower.

13.

The wind moderated on the 15th: but while I was preparing to get under way, the sheet cable broke, and left me with no other resource than the small bower. These accidents, added to the crosses I had already experienced in the course of my voyage, disconcerted me. All my cables were rotten, as well as the halliards, sheets, tacks, lifts, and braces, and in short every rope in my ship*. This wretched state of my cordage left me the melancholy prospect of losing the only anchor I had left; and if this should happen, I could expect nothing but to be cast away on some distant shore.

15.

To answer the most pressing necessity, I ordered a hawser to be carried to a neighbouring rock; and this served to hold me with my remaining

* Here I pass over a long circumstantial account of the damages of the rigging, and a whole litany of the author's complaints, in which the reader would find little amusement. Beside, there are many faults in the manuscript, and I am not sufficiently versed in nautical terms to correct them all.

1781. anchor. I also set my people to sweep for the two lost anchors, and they
March. were employed in this work for four-and-twenty hours, but in vain, the water being too deep.

My troubles would not allow me to accept an invitation from the tubou, to be present at an entertainment of the same kind as that he had given me before: but this prince, who called me his son, and no doubt loved me as if I had been really so, did not forget to send me every evening two baskets of sweet potatoes, a few fowls, and some fish. He also sent me all the store of provision he had been able to collect for the new entertainment: came several times on board the ship; often dined with me; and then took his afternoon's nap on board.

16. On the 16th I endeavoured to get out. The wind being contrary, I plied to windward; and though the current set against me, and the channel was so narrow, that I had scarcely room to tack, I found myself at the last stretch to windward of all the points: but a violent gust of wind, taking me a-head, drove me toward the rocks between which I was sailing. At this my embarrassment was greater than ever: I had no resource, but to return to my old harbour, let go my anchor, and carry a cable ashore, to hold me in the best manner in my power.
18. The 18th I sent my first pilot in the long-boat to sound another channel, enclosed indeed by several islands, but promising us an easy outlet with the wind that then blew. The pilot assured me on his return, that the bottom was good all the way, free from shoals, and wide enough to admit of tacking if necessary. I prepared, therefore, for my departure on
19. the 19th: and that day, at two in the afternoon, I had cleared all the islands, which at that time was the most fortunate event I could desire.

The tubou and the Indians did not expect this separation, with which they were very sensibly affected. The king and queen took leave of me with the strongest demonstrations of sorrow, and the Indians accompanied us in their canoes, till we were out of their archipelago.

This port, which I named *Puerta del Refugio*, is formed by three tolerably large islands, and many smaller ones. To the whole group I gave the name of *don Martin de Mayorga*. The harbour lies in $18^{\circ} 36'$ south latitude, and $179^{\circ} 52'$ longitude east of Paris. There cannot be a more secure place of shelter in all weathers: let the winds blow ever so hard, the sea would remain unruffled, and even a hurricane would spend its fury in vain. On entering between these islands, either by the north-west or south-west channel, you will have fifty or fifty-five fathoms of water, with a pebbly or gravelly bottom, which continues all the way to the centre of the gulph, till within two cables' lengths of the shore, where you will find but thirty-five or forty fathoms, and in some of the creeks the water diminishes to twelve or fifteen fathoms. There are neither shoals nor reefs; but it is necessary to choose your birth with the lead going, because in some coves the bottom is partly earth*, partly sand.

1781.
March.

The soil is so fertile, that it must afford abundant crops to the cultivator. Every where are to be seen multitudes of cocoa-trees, superb banana-trees ranged in the nicest order, and many plantations of sweet potatoes, as may be concluded from the great quantity sent on board our vessel, other sweet roots nearly of the same kind, lime-trees, sugar-canes, a fruit much resembling an apple, oranges, and shaddocks. Two or three equis having once conducted me to a fertile plain, I admired the order in which every thing was arranged: not a single weed is to be found in their plantations; and their roads are kept in a degree of order, worthy to be imitated by the most polished nations. Observing their zeal for agriculture, I gave them some beans, maize, pimento, and rice; explaining their uses; and assuring them, that they would not fail to thrive in their richer lands.

They likewise cultivate shrubs, ranged in the same order as their banana-trees. The bark of these shrubs they use for weaving their mantles or counterpanes †, and likewise a kind of petticoat.

* Should it not be rock, instead of earth?

† Their counterpanes were said before, to be made of the leaves of the palm-tree. T.

1781.
March.

Their conduct, during the whole of our stay, evinced their confidence in us; but I confess, I could not feel the same sentiment towards them. I never landed without an armed party, which inspired them with awe. Accordingly they never gave us any ground for complaint, unless by their propensity to thieving, which it is impossible for an Indian to suppress. As often as they came on board, every article of clothing or iron-work, that came in their way, was considered by them as lawful plunder. They dragged out through the port-holes or windows whatever they could reach. They stole even the very chains of the rudder. In consequence I complained to the king; who gave me leave to kill any one, whom I should take in the fact; and I was told, that he had discovered the perpetrators of the theft of which I had complained, and punished them with death. Their conduct having roused us to greater vigilance, we caught some islanders attempting to force off the new rudder-chains, upon which we fired a pistol, and shot one of them dead. This was a lesson for those who were on board, or alongside of the frigate, and they said to one another, *chito*, robber, *fama*, dead.

I did every thing in my power to discover, whether they had any sort of religion, whether they worshiped any creature or idol: but we observed nothing, that could lead us even to suspect any such thing.

We found no difficulty in pronouncing their words; and they pronounced ours with equal ease. A stay of a few months would have enabled us to use either language indifferently. If our disasters had not totally absorbed my mind, I would have formed a collection of all the words of their language, that would have enabled a person to hold discourse with these Indians. In my few conversations with them, I obtained the names of all the parts of the body, and those of the numbers as far as ten.

They informed me, that two frigates had put in and refreshed at their islands; that the captains, and five or six officers of each, had slept on shore; and that they had given them strings of beads, hatchets*, and

* Hence we may conclude, that these frigates were Spaniards; as probably were likewise the two vessels mentioned in the next sentence.

adzes. On the 16th of March, when I was preparing to sail, they told me, that two vessels, resembling mine, were then passing by to the north-west; and they entered so minutely into the particulars, that I could not doubt the truth of the assertion.

1781.
March.

The equis constantly wear a mother-of-pearl shell suspended from the neck, and have both their little fingers cut off close to the hand.

The tubou exerted every effort to induce me to repair with the ship to the place of his usual residence, where I should find a much greater abundance of provision: and I certainly should have complied with his request at the first invitation; particularly as he and all the Indians assured me, that I should there find better shelter, and more convenience for repairing my rigging; but the nature of my commission would not allow it.

During the short time of my stay, I could not learn what were the functions of the equis, how they were distributed, what was the nature of the tubou's authority, or what the extent of his power. On the latter days of my stay in particular, my vexation was so great, that I could think of nothing but getting to sea. In truth I may say, that, but for the disastrous event of my cable's breaking, which exposed me to a thousand risks, I could not have put in to a more fortunate port: since, beside getting a sufficient stock of water, and repairing five-and-twenty empty and unserviceable pipes, we found more refreshments for the crew, than we should have done in our own harbours; so that they did not regret the stoppage of their half allowance, which I discontinued to serve out, as they had provision for several days; and the sick of the scurvy, who, according to the surgeon's report, were in a hopeless state, recovered their health. In short, we met with a prince so disposed to befriend us, that he was incessantly taking me in his arms, and offering me all his provision.

1781.
March.

DEPARTURE from *Puerta del Refugio*, in the Islands of *don Martin de Mayorga*, in latitude $18^{\circ} 38'$ south, longitude $179^{\circ} 52'$ east from Paris.

20. ON the 20th of March, having cleared all the islands, the wind being east-north-east, I hauled as close to it as possible, keeping as near as I could a south-east course. In this run we discovered to the east-south-east 7° south a very lofty island at fifteen or sixteen leagues distance; and at sunset we saw three others, stretching from the south to the west-south-west 5° west, the easternmost being distant five leagues. This obliged me to tack at nine in the evening. At one I put about again to the southward, to approach the islands. In some of the nearest we perceived at least fifty fires.

21. ON the 21st, at sunrise, we counted ten islands on the starboard, and six on the larboard. We ran between them to the southward through the wide channels they formed, seeing none a-head, till we got into a vast bay, when we discovered an infinite number of islands, at the distance of five or six leagues, forming an extensive basin, of which we were in the centre. Passing through one of the straits formed by these islands, we saw the bottom: by the lead we had five fathoms, but for a moment only, the water deepening immediately.

Seeing myself surrounded by so many low islands or little islets, which left between them numerous channels, I attempted to get into the main sea by some of these openings; but on coming near, we found the passages obstructed by heavy breakers, which would not allow us to get out to the southward. Accordingly I determined to stand to the west, towards that lofty island, which we had seen at a great distance the day before; not doubting, that near it I should find a passage out of the archipelago.

No sooner had the sun risen, than several canoes arrived in succession, laden with the same provision and fruits as those of the former islands. The market commenced, and shreds of cloth were the price of the goods.

1781.
March,

The tubou of these islands sent me two hogs, and a few cocoas, with an invitation to repair to the island where he resided. At length he came on board himself; and he assured me, that a wrestling match should be exhibited for my entertainment, and that he would give my crew a pile of sweet potatoes as high as the main-mast. He appeared to be jealous of the kind reception we had met from the tubou of Mayorga.

I gave him hopes that I would gratify him as soon as I got to the southward of the islands a-head of us: but they all agreed in asserting, that the passages were closed up by reefs and shoals, and that I should find a good bottom if I steered my course by the island of the tubou, and the lofty island, towards which I was already standing.

Though they all asserted, that this great equi was the sovereign of forty-eight islands, all of which they named very circumstantially, I did not perceive, that they paid him the same respect and attention as were shewn to the tubou of Refugio. As soon as he came on board, he took off his mother-of-pearl shell, and hung it round my neck, as a testimony of strict friendship; and after having spent five or six hours with me, he returned to one of the islands, hoping that I should join him the next day.

I passed by many of these shoals, and at sunset I found myself six leagues to the eastward of *San Christoval* or Saint Christopher's*, and clear of all the little low islands; but as the wind freshened from the east, I kept under an easy sail all night, that I might not run ashore on some little island, which I had not yet seen.

To this group of islands I gave the name of *don Joseph de Galvez*. The southern cape of the tubou's island is in latitude $19^{\circ} 39'$, longitude $179^{\circ} 38'$ west of Paris.

On the 22d at day-break I crowded sail, keeping as close to the wind as

22.

* What island of St. Christopher is this? Is it the lofty island just mentioned, to which he had given that name? If so, he should have informed us.

1781. I could lie, and making nearly a southerly course, when we perceived two
March. islands a-head, which I named *las Culebras*, or the Snakes. Beyond them
we discovered an extensive shoal, the breakers on which were visible a
long way off. It was distant from us about five leagues.

The winds being easterly, or a little to the northward of the east, we continued our voyage with minds a little more at ease, finding ourselves clear of the dangers to which we had been exposed from shoals and islands.

24. We saw nothing more till the 24th, when we discovered a small island, which I named *la Sola*, or Single Island, at seven leagues distance, in the
27. third quarter (between the south and the west). On the 27th we descried another, west-south-west 3° west, distant ten leagues, to which I gave the name of *Vasques*.

28. In the night between the 27th and 28th, the wind blew violently, and the sea ran very high. At midnight I was obliged to bring to till day-break; when the gale abated, and I directed my course to the west, with a light wind from the north-east.

29. On the 29th, finding myself in latitude $25^{\circ} 52'$ south, and reckoning my longitude to be $179^{\circ} 17'$ east of Paris, the wind came round to the west. Of this I availed myself to steer south-east by east, wishing to get into a higher latitude to the south, and to make easting in my longitude at the same time. This course I held till the 3d of April, when, being in latitude 30° , longitude $174^{\circ} 22'$ west of Paris, the wind fell to nearly a dead calm.

In this situation, the crew continually complaining, that their bread was not eatable, I resolved to examine it myself. When I saw the state in which it was, I could not avoid considering myself as in the most dreadful of all situations, to which those who navigate unknown seas are exposed, and without hope of assistance. Never shall I recollect that sad moment, but the spectacle which then struck my eyes will at the same time present itself and rend my heart. With truth I can assert, that if God had not supported me in that trying situation, I should have sunk

into despondency, seeing no possibility of our being able to continue our voyage.

1781.
March.

I sent for the first pilot, don Joseph Vasquez, and the second, don John d'Echeverria; I assembled all the warrant officers; and I appointed don Peter Carvajal, the surgeon, to draw up the report of the council we should hold, and the resolutions we should adopt. I led them one by one to the bread-rooms. We found there millions of cockroaches. It is impossible for a man, without having seen them with his own eyes, to form any idea of their number. These vermin had so infested the frigate, that the chaplain had several times been obliged to exorcise them. For my part, I had taken the precaution, to place in the cabins, store-rooms, and all parts of the vessel, pots *, besmeared in the inside with honey and sugar. Every day brought me a bucketful of these insects, and I used almost all my honey, yet their number appeared to be not in the least diminished.

On opening the bread-room, the bread seemed to be untouched; but near the partitions, the biscuit had entirely disappeared, and left nothing but a heap of dust and bran. From a calculation of the diminution of allowance which I had ordered on the 16th of February, and the deduction of an ounce in the pound, which I had made ever since our departure from Sisiran, we should have had three hundred and twenty nine arrobes † of bread remaining, without reckoning other provision, of which there was no want: but I saw we were reduced to two large casks filled with dust rather than bread ‡. I ordered the three reserve casks to be opened, which were well secured with good hoops, and well pitched: there was no appearance in them of their having ever contained a single biscuit, they were full of nothing but cockroaches.

* The expression in the original is *spitting-pots*.

† The arrobe weighs 25 lbs. the pound is 16 ounces [a little heavier than our *avoirdupois*].

‡ Here again I abridge the original.

1781.
March.

The first thing I did was to get as much bread picked out as possible, and lock it up in the arm and colour chests. On being weighed, it was found to amount to forty arrobes*. In the next place I collected all the sweet potatoes that were to be found among the crew: but as a fortnight had elapsed since they had furnished themselves with this species of provision, their stock was almost all consumed, so that I could scarcely obtain a couple of hampers full. In the third place I killed all my pigs and live stock, except a few fowls which were reserved for the sick. I saved for the same use the little honey remaining of the stock which I laid in at Sisiran. The fourth precaution I deemed it incumbent on me to take was instantly to stop the allowance of bread, and distribute to the crew a small portion of sweet potatoes, from the store with which I had supplied myself in the islands, with three ounces of pork and one of rice per man. In this I had no other object, but to preserve their lives, till I should be in a situation to afford them more ample succour. Lastly, I determined to share with them my own provision, reserving the two chests of bread, which I deemed sacred, for our last resource.

After having taken all these resolutions, I held a council with the officers mentioned above. I stated to them what I had done since the 20th of January, what bread ought to have been in store, and what actually remained. I told them, that I was the more desirous of giving them an account of the steps I proposed to take, because they had themselves suffered retrenchments, which I had deemed it necessary to make, and which had occasioned me to be considered, perhaps, as a tyrannical and hard-hearted wretch, destitute of every sentiment of humanity: that we were at present seventeen hundred and sixty leagues from Peru, and twelve hundred and forty from Guam in the Ladrone Islands: that the winds would be favourable for either of these courses, bating a few calms or contrary winds, which must always be expected in such voyages: that they saw the state of our provision before their eyes: and lastly, I requested them to tell me how they themselves would act, had they the command

* About ten hundred weight. T.

of a ship in similar circumstances. They all answered unanimously, that death alone could be worse than the condition to which we were reduced: that, of the two courses proposed, though either afforded us very little hope of saving our lives, it was indispensably necessary to take that of the Ladrões, and try if we could not procure some assistance at the Islands of Martin de Mayorga, as we had not sufficient provision on board for a month. The first and second pilot joined in the same opinion. Convinced in my own mind, that their advice was the most judicious; and unwilling beside to contribute to the loss of so many unfortunate beings, or oppose what appeared to me most conducive to the interest of the king; I ordered the ships to be put about to the north, intending to get forty leagues to the eastward of the islands, where I had already found, and hoped again to find, refreshments. I did not, however, take this resolution, without experiencing a pang still greater than what I had felt from the inspection of our provision. Death would have been far less unwelcome to me, than the necessity of returning to the northward; and if I had not suffered myself to be swayed by reason, I should have taken the mad resolution of pursuing my voyage to the east. The serenity of my mind was destroyed: I was far from experiencing the tranquillity, with which I had endured an infinite number of crosses, in the very laborious voyages I had undertaken to make new discoveries *. The reflexion, that we could take no other step, was insufficient to calm my mind; particularly when I considered, that this state of distress displayed itself precisely when we had surmounted the difficulties of our navigation, and reached a latitude, in which we might expect nothing but favourable winds, and in which I believed we might terminate our voyage. It is certain, however, that, if the thought of inspecting the state of our provision myself had been delayed a fortnight longer, the greatest happiness we could experience must have been, to have found some desert island, and there to have subsisted as we could. Even in the situation in which we were, if the refreshments furnished us by the Indians had been less abundant, there would have been no other course left for us to pursue. Assuredly therefore it was the hand

1781.

March.

* What great services would this navigator do geography, if he would condescend to make his discoveries public!

1731. of Providence, that directed us to the islands of Mayorga, where we ob-
March. tained such ample assistance.

April. With the variable winds which blew from all the points of the com-
4. pass, I steered my course, from the 4th of April, to the north, or as near
9. as I could in the first quarter (between the north and east). On the 9th
the breezes from the south-east to the north-east began to prevail; and I
availed myself of them to get into the latitude of the Islands of Mayorga
forty leagues to the eastward of them, that I might find them again the
more easily by running down their parallel.

16. 18. On the 16th the wind became calm. On the 18th it blew hard, with
heavy rain, and a black sky; so that we were obliged to lie to all night.
At day-break we ran for the islands; but the current had set us a few mi-
nutes to the northward; the foul weather had not afforded us any observa-
tion; the islands, beside, are very low, and we did not perceive them.
We discerned to the north-west the island that lies south-west 7° south of
Latte, and on approaching it we saw Latte at the distance of six leagues.
Hence it appeared, that my reckoning was thirty miles astern of the ship;
and that consequently we had passed between the two archipelagoes of
Galvez and Mayorga, at a very little distance from each; but that the
continual mists, and thickness of the horizon, had prevented us from see-
ing them.

As the hope of being able to fetch the islands of Mayorga was all that
kept up the spirits of my sailors, I hauled my wind as close as possible,
and reefed my topsails: but the sea ran high, the wind was strong, and
the night dark. I was obliged, therefore, to relinquish my design of
touching at these islands, persuaded I could not reach them without losing
several days, even if at all, which was a matter extremely doubtful. My
people, however, were disheartened at the sight of the wretched state to
which they were reduced. Their weakness was so great, that it was fre-
quently necessary for the hands of both quarter-deck and fore-castle to assist
in hoisting a single topsail. The most abstemious regimen of an hospital

could not have enfeebled them more. To inspirit them, I represented, that, in the course we held, we should certainly meet with other islands, where they might recruit their strength; that the wind was fair; and that every day carried us at a speedy rate towards the term of our sufferings. These arguments calmed their minds, and they took patience.

1781.
April.

On the 21st we discovered two islands to the north-north-east and east-north-east, to which I gave the name of *Consolacion*, because my crew found succour there; providing themselves with sweet potatoes, hogs, cocoa-nuts, bananas, and fowls, which the islanders brought us during the thirty hours that I remained off the coast. Had the weather been less rough, we should have obtained refreshments in greater abundance: as it was, the crew procured a sufficiency of provision for more than a week by trafficking with their clothes, which they did not spare, at the risk of being almost reduced to go naked. By these means they recovered their strength, and were better enabled to support the last misfortune that awaited them.

21.

As we saw a great number of canoes laden with provision coming to meet us on our approaching the island, I stopped the small allowance of provision that I served out from my own store, for a reason sufficiently obvious.

The Indians of these islands spoke the same language as those of *Refugio*, and resemble them in disposition. Their confidence in us was so great, that nineteen of them slept on board, without our being able to prevent them; and the following day we were obliged to employ force to get rid of them.

They wanted to prevail on me to land on their island, where they would sell us, they said, several large hogs, the smallness of their boats not allowing them to bring off any but small ones: but as my time was precious, I contented myself with seeing, that no one on board neglected

1781. himself, and that all the provision was procured which circumstances
April. would permit.

22. On the 22d in the evening I steered north-north-west, with a light
24. wind at north*; and in this course I discovered on the 24th another island, to which I gave the name of *Maurelle*. The wind fell calm, except a few squalls, and a few short puffs from the north-east, which prevented me from standing for the island before sun-set; when the wind coming round to the south-east, I got within three leagues of it; but the night, and the distance, too great for the little boats of the Indians, induced two canoes to put back, which were coming off under sail, laden no doubt with refreshments.

May. The wind continued to blow from the first and second quarter (from
5. the north to the east, and from the east to the south), sometimes fresh, at other times lightly, till at length it subsided into a calm. I availed myself of every favourable moment, and on the 5th of May, I found myself in the latitude of 6°. We here found a very low island, surrounded by a sandy shore, terminating in an impenetrable ledge of rocks, near which I found no bottom with a line of upwards of fifty fathoms. The island was covered with a thick plantation of cocoa-trees†. The sight of these was the more pleasing to my crew, as that very day the last of the provision procured at the Island del Consolacion was expended.

I sent the long-boat armed, to bring us if possible several ladings of cocoa-nuts; but the breakers of the reef would not allow her to land. The ship, in the mean time, advanced so near the coast, that the islanders spoke to us from the shore, but we saw no possibility of getting

* Here there is some mistake. With the wind at north the Spaniards could not have made a course to the north-north-west: no doubt we should read a north-east wind, or a west-north-west course.

† It will appear presently, that this island was named *Isla del Cocal*. *Cocal* signifies a plantation of cocoa-trees.

nearer. The Indians, however, launched their canoes, though not without great difficulty, on account of the ledge of rocks. They came on board in great numbers; but the difficulty of getting off allowed them to bring only a small number of cocoas. They endeavoured to tow the vessel, by fastening several ropes to the bows, and rowing all together towards the island, from which also they threw ropes, to haul us to the shore. Finding, that in six hours they could not succeed, and having no hope that the object would be accomplished, I made sail to the north-west.

1781.
May.

The inhabitants of this island began very much to vary in the pronunciation of several words common to the other islanders. They came on board so bedaubed with paint, that we were almost tempted to take them for representatives of demons. The beards of most of them hung down to the breast. Near the plantation of cocoa-trees, there was such a number of huts, regularly arranged, that the island may be concluded to be extremely populous.

On the 6th I found myself obliged to reduce the allowances to five ounces of bread, three of pork, and two of beans, which I took from my own private stores, the king's being all exhausted: and though I deemed it impossible for the crew to live upon ten ounces of indifferent food each, the lamentable state of our provision would not permit me to give them more.

6.

The same day, in the evening, we saw another island, still lower, but larger, than the preceding. I named it *San Augustin*. We left it to the south-west, distant six leagues.

The 13th, on passing the line, we had squalls from every point of the compass. All the remarks on the state of the horizon which I had made since our leaving the Island del Cocal persuaded me, that, after passing it, we had left to the east many islands, which, with the islands of Solomon,

13.

1781. no doubt form a chain, more or less open, to the south of the equi-
May. noxial.

During the time that the allowance of bread was restricted to five ounces, there was not one of my people, who did not experience a weakness of the stomach. They were all so feeble, that the hands of the quarter-deck and fore-castle together were hardly able to hoist the sails; so that we were often obliged to refrain from manœuvres, that might have proved of considerable utility.

22. On the 22d, according to my reckoning, I was on the shoals of St. Bartholomew. Prudence, no doubt, would have required me to lie to sometimes in the night, particularly as the wind was not merely fresh, but even blew hard. Yet I was too sensible of the melancholy state of my crew, most of whom were attacked by the scurvy, owing to the badness of our bread, to lose a moment; so that I carried all the sail the ship would bear, and endeavoured, by recommending the utmost vigilance to the crew, to make up for the precautions I would have taken under any other circumstances.
24. On the 24th we were in latitude $13^{\circ} 16'$ north, and all our dangers past. Accordingly I steered west by north for Guam, the capital of the
31. Ladrones, and came to an anchor in the road of Umata on the 31st; where I immediately received the necessary assistance of provisions for reinstating the health of my crew.

As I had but a single anchor, which was by no means sufficient to hold me in the road, I sent an express to don Philip Zerain, governor of the island, informing him of the state of my ship, and the object of my voyage, and I requested him, to put me into a condition to get to sea again as soon as possible: I assured him, that, rotten as my rigging was, I was resolved to repair to New Spain, in order to deliver into the hands of his excellency the viceroy of Mexico the important dispatches, with which I was entrusted: and I added, that I hoped he would supply me with the

provision indispensable for so long a voyage. I did not require such articles of provision, as were usually furnished to the king's ships, which were perhaps not to have been found in the presidency; but such as might be procured in the island, provided their quantity was such, that they might be considered as equivalent to the ordinary allowance.

1781.

May.

The governor was desirous of judging for himself what was necessary to the success of my expedition; and considering how important it was, that the wind should not blow us out to sea, in my present destitute state, he sent on board rice, maize, and hogs, sufficient for a fortnight, without discontinuing the daily supply furnished for the recovery of the scorbutic, and for rendering my people capable of a new voyage. He likewise ordered a very old anchor to be conveyed from the capital, which was ten leagues from Umata. A fourth part indeed of the stock was wanting, but I repaired it so as to make it fit for service; and by the help of a wooden anchor, which I constructed with the carpenter's assistance, we were in the space of a week riding with three anchors, though not to the perfect satisfaction of the crew.

Nothing now remained to render us secure of a subsistence, both at sea and in harbour, but to take in a stock of water. Since my arrival I had sent on shore, one after another, all our empty casks. It was not long since we had filled them at the islands of Mayorga. What then must have been our astonishment, to find, that we had but two pipes of water left, and even one of these wanted a barrel of being full? I requested the governor, his major, and all my crew, to witness this enormous waste with their own eyes; and they all gave thanks to God, for having preserved us from the imminent danger by which we had been threatened.

As all the staves of our casks were damaged, we were obliged to repair them anew: but when this was done, the pipes, which before held six barrels, would contain but four; and we could make but forty-eight pipes out of the whole. The governor, sensible of the insufficiency of this stock,

1781.
May. sent on board thirty cannes, each containing eight quartillos*. This no doubt was insufficient to compensate for the waste we had reason to expect from our detestable vermin. I took courage, however; hoping, that, attracted from our casks by the abundance of our provision, the evil would in part be remedied.

Without any expense to the royal treasury, I procured a hundred and forty *anegues*† of maize, sixty of rice, thirty hogs, twenty young bulls (or oxen probably) forty-five *a—*‡ of hung meat, butter, salt, oil such as the country afforded for the lamps, cocoa-nut brandy for the crew, sixty cocoa-nuts for the hogs, and all the other little articles necessary on board a ship. In more favourable circumstances, we should not have been satisfied with such provision. At length, on the 20th of June 1781, I prepared to depart for New Spain, to execute a commission which might prove highly conducive to the good of the state.

Departure from the Road of Umata, in the Island of Guam, the chief of the Ladrones, in latitude 13° 10' north, longitude 21° 28' east of Manilla.

June.
20. Accordingly I got under way the 20th of June, and once more experienced the great weakness of my cables, particularly of that which was bent to the anchor given me by the governor. The anchor was scarcely out of

* Probably there is some mistake here. According to Paucton, *Traité des Mesures, Poids, &c.* "Treatise on Weights, Measures," &c. thirty *cannes*, of eight *quartillos* each, would have contained only a hundred and twenty five Paris pints [English quarts], and not half that quantity, or sixty Paris pints only, according to the Dictionary of Séjourant. This would have been of very little assistance. Probably we should read eight hundred or eight thousand quartillos.

† The *anegue*, or rather *fanegue* contains nearly four bushels and half of Paris [about a bushel and half English] measure.

‡ This abridgement, *a—*, probably signifies *anegues*: the author has used it elsewhere, however, for *arrobes*. Now the *arrobe* dry measure weighs twenty-five pounds; so that forty-five *arrobes* would be but eleven hundred and twenty-five pounds, which make no great stock.

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the water, when the cable gave away, and the ship in casting had gotten into deep water, which the cable was unable to reach.

1781.
June.

The time of the year allowed us to take a northerly course. The east and east-north-east winds carried me as high as the latitude of $20^{\circ} 10'$. We had afterwards a dead calm for seven days, during which we had not the least movement, except what was imparted by the currents, which drifted us to the north-west.

On the 3d of July, in the latitude of $24^{\circ} 26'$, the winds of the fourth quarter (between the west and north) began to blow, sometimes pretty briskly, at other times faintly. They carried me by the 7th into the latitude of $25^{\circ} 9'$; and I then reckoned myself to be off the island of the Great Volcano. We continued our course till the 11th, when, finding myself in the latitude of $27^{\circ} 52'$, I judged I was 25 leagues to the eastward of the island of Mal-abrigo or Shelterless Island, and that I had weathered the whole chain of the Ladrões. The wind then came round to the third quarter (between the south and west), and I steered north-east, still aiming to increase my latitude, that I might fall in with the brisk westerly winds. When I had reached the latitude of 40° , I steered east by north as far as the wind would permit: but on my arriving in the latitude of 43° , longitude $179^{\circ} 28'$ east of Paris, the wind veered to the second quarter (between the east and south), and blew so strong, that I was obliged to lie to for eight and forty hours.

July.
3.

7.

11.

On the 5th of August the wind came to the north-west, and I steered east by south till the 13th. The winds then blew from every point of the compass, but at length settled in the second and first quarters. I availed myself all I could of these variable winds to gain easting.

August.
5.
13.

On the 30th I found myself in latitude $37^{\circ} 5'$ north, and longitude by estimation $144^{\circ} 17'$ west of Paris, distant two hundred and sixty leagues from Cape Mendocino. The wind then settled in the fourth quarter; and

30.

1781. I steered east till the 3d of September, when we saw trunks of fir-trees and sea-weed floating on the water, the first signs of our approaching the northern coast of California, to get in with which I steered east-south-east.

4. The colour of the sea changed on the 4th, and the appearance of some small birds convinced us, that we were not far from land, and should soon be in sight of it.

8. On the eighth I found myself off Punta de los Pedernales, or Gun-flint Point, distant five leagues. This bearing made my longitude $123^{\circ} 3'$ west of Paris, which I had estimated at $130^{\circ} 34'$, so that there was an error in my reckoning of a hundred and twenty-two leagues to the west.

After getting sight of this point, I stood for Cape San Lucar, and passed by the island of Guadelupa to the eastward, at the distance of eight leagues.
20. For some days it was calm; after which, on the 20th, I got sight of the
22. promontory of San Lazaro, and on the 22d I was near Cape San Lucar.

25. On the 25th, after some calms, during which I was almost always in sight of this cape, a dreadful hurricane arose, which, in the space of six hours, ran from the east, by the north and west, round to the south, with such fury, that, notwithstanding the violence of the swell, which set right a-head, we made seven knots and a half an hour under a mere foresail. Had the hurricane continued a little longer, it would unquestionably have carried away our masts.

The same day, when the hurricane had subsided, I loosened every sail, and stood for the Three Marias, the north point of which I doubled on the
26. 27. 26th; and on the 27th, at night, I anchored in the road of San Blas, in latitude $24^{\circ} 30'$, longitude $134^{\circ} 54'$ east of Manilla, $107^{\circ} 6'$ west of Paris. I had the happiness to bring my crew thither, safe and sound, notwithstanding the horrible ravages which the cockroaches had made in our provision, and the distress which had been the consequence, with the loss of

only two men, one of whom died in the port of Sisiran, before our departure, and the other was in a consumption when he came on board. 1781: September.

San Blas, September 27, 1781,
on board the frigate la Princesa.

F. A. MAURELLE*.

* I have not thought proper to add any remark to the account of this voyage, styled *interesting* by Maurelle: but, as the hydrographer may profit by the least accurate journals, I thought it might be useful to some navigators, or serve to elucidate some geographical discussions, notwithstanding the judgment, too severe perhaps, passed upon it by la Pérouse, in the extracts from his correspondence inserted in the second volume. (French Editor.)

EXTRACT

FROM THE ACCOUNT OF A VOYAGE MADE IN 1779, BY DON FRANCISCO ANTONIO MAURELLE, ENSIGN OF A FRIGATE IN THE SERVICE OF THE KING OF SPAIN, TO EXPLORE THE WESTERN COAST OF NORTH AMERICA.

WITHIN these few years the Spaniards have undertaken three voyages, to explore the western coast of North America. In the first, Don Juan Perez, first pilot, proceeded as high as the latitude of 55° , and twice reconnoitred the coast between this point and Port Monterey.

The second voyage was in 1775. For this expedition a frigate and a schooner were equipped. The schooner was commanded by Don Juan Francisco de la Bodega y Quadra, lieutenant of a man of war. Don Maurelle, who accompanied Don de la Bodega, and was then only a second pilot, drew up an account of the expedition. A copy of this account came into the hands of the English; and the Hon. Daines Barrington published it in England, translated no doubt into the English language*. Captain Cook quotes it in his account of his third voyage. But Captain Dixon, in the account that is published of his voyage to the same parts, accuses Don Maurelle of palpable falsehood. According to him, it is evident, that this Spanish navigator never was in the tracks, in which he boasts of having made fruitless researches. The charge is strong: if it be well-founded,

* It was published by Mr. Barrington in a volume of Miscellanies, and an abstract was given in the former part of this volume from the French, in which there were several inaccuracies, which have been corrected in this English edition, by a careful collation of it with Mr. Barrington's translation. In one place in particular, the French translator, mistaking the English word *reed* for *red*, has made the navigator observe at sea, instead of "fish, and reeds twenty feet long," "*red fish twenty feet long*." See page 98. T.

Don Maurelle deserves no confidence. "We endeavoured," says this navigator, "to find the entrance of Admiral de Fuentes, though we had not yet discovered the Archipelago of St. Lazarus, through which he is said to have sailed After all the pains we took to no purpose, we can assert, that the entrance does not exist." . . . "Now," says Captain Dixon, "the situation of Queen Charlotte's Islands, viz. from 54° to $51^{\circ} 56'$ of north latitude, and from 130° to $133^{\circ} 30'$ west longitude, evidently shews, that they are the archipelago of St. Lazarus*." But is it so very clear, that what captain Dixon calls Queen Charlotte's Islands is really a group of several islands? "There is every reason to suppose so," he says, "from the great number of inlets we met with in coasting along the shore†." These inlets, however, may have been nothing more than creeks; for captain Dixon did not penetrate into any of them: indeed he had something else to do; his business was not to make discoveries, but to procure fine furs at as cheap a rate as he could, to sell them dear in China. Beside, he is not the author of the account: it is said, in the introduction, to be the performance of a person "totally unused to literary pursuits, and equally so to a sea-faring life‡." But captain Dixon informs us, in the same introduction, that he has carefully corrected every thing relative to the nautical part. The whole, no doubt, is properly corrected; but to support the erroneous opinion, which he appears to have embraced, of the reality of the discoveries of admiral de Fuentes, it was not necessary to tax a navigator, whose sole object was to make new discoveries, with imposture.

The discoveries made by Maurelle in this second expedition extend to the latitude of 58° . Don Maurelle had laid them down upon a chart, which probably never came into the hands of the English§: perhaps the Spaniards will publish it, and then the discoveries made by Maurelle may be examined and compared with those of Cook and of Dixon. Don de la Bodega and don Maurelle discovered, among other places, the entrance of a harbour, in

* Captain Dixon's Voyage, Introduction, page xiv. † Voyage, page 224. ‡ Int. page xxii.

§ The editor need only to have attended to the abstract of the voyage in the former part of this volume, to have seen that it did not. Mr. Barrington expressly says, that "the charts unfortunately did not accompany the Journal." T.

latitude $55^{\circ} 18'$, which they imagined must be a very good one; and to which they gave the name of Bucarelli, in honour of friar don Antonio Maria Bucarelli y Ursua, viceroy of Mexico, who spared nothing that depended on himself, to promote the success of these expeditions. They also discovered two very good havens, that of Guadelupa, in latitude $57^{\circ} 11'$, and that of los Remedios, in $57^{\circ} 18'$. Cook, in his third voyage, in 1778, saw these harbours, but did not stop at them.

A third expedition was ordered by the king of Spain in 1777; the object of which was to finish the examination of the north-western coast of America, from the latitude of 58° to 70° . Don Bucarelli fitted out two frigates: the *Princesa*, commanded by don Ignacio Arteaga, lieutenant of a man-of-war; and the *Favorita*, commanded by don de la Bodega, who took for his second captain don Maurelle, then ensign of a frigate. They agreed first to repair to the Entrance of Bucarelli, there to take in wood and water, &c.

They sailed from San Blas, which they place in the latitude of $21^{\circ} 30'$ north, and longitude $107^{\circ} 6'$ west of Paris, on the 11th of February, 1779. On the 3d of May they arrived at the Entrance of Bucarelli, the geographical situation of which, according to them, is $55^{\circ} 18'$ north, and $139^{\circ} 15'$ west of Paris. There is no reason to question the accuracy of the latitudes assigned by don Maurelle: but the same cannot be said of his longitudes, which were probably determined only by estimation. According to the survey made by Cook of the coast near Bucarelli the year before, this port must be near 227° east of Greenwich, or $135^{\circ} 20'$ west of Paris.

The Entrance of Bucarelli led the Spaniards into a vast bay. Here they anchored on the 3d of May, in a haven, than which they say there is not a better in Europe. They gave it the name of *Puerta de la Cruz*.

On the 18th of May don Maurelle was dispatched with the two long-boats, to make the tour of the bay. In this expedition, which employed him till the 12th of June, he took the bearings of all the capes, all the

islands, and all the principal parts of the grand bay; and delineated all the creeks, all the smaller bays, and all the harbours. These bays, and harbours, he says, are all good and secure anchoring places. He gave names to all of them, and lastly he sketched a very accurate plan, on a large scale, of the grand bay. It is much to be wished, that this plan was made public, as well as the chart which don Maurelle drew of the coasts and islands explored by the Spaniards in the course of their expedition. The chart, however, would be of less importance than the plan, the same coast having been visited the year before by Cook; though some particulars might be found in it, which may have escaped the English argonaut*.

Don Maurelle observed but few habitations in the course of his expedition. He saw only one village, on the top of a steep hill; at which there was no way of arriving but by a wooden stair, or rather ladder, so that if a person's foot slipped, he must infallibly tumble down the precipice.

The Spaniards were not long in the Port of la Cruz, before they were visited by the neighbouring Indians. A traffic commenced: the Indians gave their furs, and various trifles, for glass beads, bits of old iron, &c. From this trade the Spaniards were able to acquire a pretty accurate knowledge of their genius, their weapons offensive and defensive, their manufactures, &c.

Their complexion is light olive; though many individuals are perfectly fair: and all their features are well proportioned. They are robust, courageous, haughty, and warlike.

Their clothing consists of one or more raw skins (with the hair probably) of otters, seals, benades (a species of deer), bears, or other animals, which they take in the chase. With these they are covered from the neck to the midleg; and many of them wear boots of skin without the hair, much resembling English boots, except that they are laced up before. On their heads they wear hats made of narrow slips of bark woven together in the shape

* This plan, on a reduced scale, will be found in the volume of Charts and Plates to Pêrouse's Voyage, N° 26. (French Editor.)

of a funnel, or of a cone. On the wrists they have bracelets of copper or iron, or, for want of these, of whalebone; and round the neck rows of small pieces of bone of fish or other animals, or sometimes copper collars two fingers thick. They wear ear-rings of mother-of-pearl, or plates of copper, on which are embossed pieces of resin of the colour of topaz, with grains of jet. Their hair is long and thick. They use a comb much like ours to gather it into a little tail from the middle to the end, tying it with a narrow ribband of coarse linen woven for the purpose.

They also wear over their shoulders a kind of mantle*, a yard and half long, and a yard wide, of the same texture as the *peillons*† of Peru, round which is a fringe four or five inches deep, made of threads regularly twisted.

The women evince in their dress the modesty and decency of their manners. Their countenances are pleasing, their complexion tolerably clear, their cheeks rosy, and their hair, which they wear braided, long. Their principal garment is a long robe of smooth skin, girded about the loins, and not unlike that of our monks, covering them from the neck to the feet, and with sleeves reaching down to the wrists; and over this robe they wear several skins of otters, or other animals, to protect them from the cold. Were they better drest, many might dispute the prize of beauty with the handsomest of our women in Spain; but, not content with their native charms, they have recourse to art, which, far from embellishing, serves only to disfigure them. All the married women have a large opening in the lower lip, filled up with a piece of wood, of an oval shape, and near an inch wide in it's smallest diameter. The older a woman is, the greater the extent of this elegant ornament; which renders them frightful, the aged particularly, whose lip, robbed of it's natural elasticity, and dragged down by the weight of this precious jewel, necessarily hangs in a very disagree-

* In the Spanish it is *algunas presadas*. I do not know, that *presadas* signifies any thing but green: perhaps *presadas* was written for *frazadas*, coverlets: *p* for *f*, and *s* for *z*, frequently occur in the manuscript.

† The Spanish *peillon* is a kind of ancient robe, still used in Peru; but of what it is made I have not been able to learn.

able manner. The girls wear only a copper needle, which crosses the lip, where the ornament is hereafter to be placed.

In war these Indians wear cuirasses and shoulder-pieces, made not unlike the whalebone stays of European ladies. Very narrow slips of wood form the warp of these, and threads the woof, so that the whole is very flexible, and gives the arms sufficient liberty for handling their weapons. Round the neck they wear a gorget covering them up to the eyes; and their head is defended by a morion, usually made of the head of some ferocious animal. From the girdle to the feet, they wear a kind of apron, of the same manufacture as their cuirasses: and lastly they have a fine skin* hanging from the shoulder almost to the knee. This armour is impenetrable to the arrows of the enemy; but with such an encumbrance they cannot change their position so readily as if they were less loaded.

Their offensive weapons consist of arrows; bows, the string of which is twisted like the base-strings of our best musical instruments; lances, four yards long, headed with iron; knives of the same metal, longer than an European bayonet, but not common among them; and little hatchets of flint, or of a green stone, so hard, that it cleaves the most compact wood without injury to the edge.

Their language is extremely difficult to pronounce: they speak from the throat, moving the tongue against the palate. The little use the women can make of the lower lip considerably diminishes the distinctness of their pronunciation. The Spaniards could neither speak nor write the words they heard.

From their quickness of mind, and attention in furnishing an abundant supply to the market established in the harbour, it may be inferred, that these Indians are far from being deficient in industry. They were continually bringing stuffs well woven, and clouded with different colours; and

* The manuscript has *quera*, which I do not believe is a Spanish word; and I suppose we should read *cuera*, the name of a kind of garment of leather.

skins of wolves, seals, otters, bears, and other animals of inferior size. Of these skins some were raw, others dressed. There were likewise brought to the market coverlets* of coarse linen, white clouded with brown, very well woven, but in small quantity: broad ribbands of the same, which might be compared with the covering of the matrasses of the Spanish officers; skeins of the thread of which this linen was woven; wooden plates, neatly wrought; little canoes, painted of different colours, the figures on which represented heads with all their parts; very exact representations of frogs in wood, opening like snuff-boxes, and serving to hold their little ornaments; square wooden boxes, three quarters of a yard each way, with figures of different animals well delineated on them, and their covers made like those of Flanders, rabbeted on the edge, so as to shut into the body of the box; wooden figures of birds, of quadrupeds, and of men with helmets representing the heads of wild beasts; nets of different kinds for fishing; collars of copper, and bracelets of iron, for which they asked extravagant prices; and beak-like instruments, from which they drew sounds resembling those of a german-flute. The principal officers selected such of these articles as they liked best, and left the others to be disposed of to the crew.

As the Indians perceived, that the Spaniards were fond of fish, they did not let them want for it. The most plentiful kinds were salmon, and a kind of sole, or turbot, three yards and a quarter long, and broad and thick in proportion. There were also brought to the market cod, sprats, and a fish resembling the trout. Of course this bay must abound in fish: the shore too is covered with shells.

The quantity of mother-of-pearl shells, which the Indians fish up to make ear-rings, excited the curiosity of the Spaniards. They endeavoured to learn, whether these people had in their possession, or whether their country produced, pearls, or any precious stones: but their inquiries were fruitless; they only found a few stones, which they judged to be metallic, and which

* Here *presadas* occurs again, which I have supposed must be read *fraxadas*, coverlets.

they carried on board, not having with them the requisites for extracting the metal they might contain.

These Indians live on fresh or dried fish, boiled or broiled; such herbs and roots as their mountains afford, particularly what the Spaniards call sea-parsley; and the flesh of such animals as they take in hunting, which must certainly be abundant, from the number of dogs they keep for the purpose.

The Spaniards could perceive no trace of religion among them, except that they sometimes made an inclination towards the sun: but whether this were an act of worship, they could not ascertain.

In his expedition round the bay, don Maurelle found, in two islands, three corpses, deposited in boxes similar to those described above, and dressed in their furs. These coffins were placed in a small hut, on a pile of branches of trees.

The country is very hilly, the hills lofty, and their slopes descend almost every where to the sea. The soil, of limestone rock, is notwithstanding covered with an impenetrable forest of high, large, and straight pines. As these trees cannot strike deep into the ground, the wind often tears them up by the roots; when they rot, and are converted into a light mould. On this mould grows a thicket of bushes, among which are nettles, camomile, wild celery, anise, a sort of cabbage, swallow-wort, alder, wormwood, sorrel, and no doubt many other plants along the sides of the rivers.

The Spaniards saw ducks, gulls, divers, kites, ravens, geese, cranes, goldfinches, and other small birds, with which they were unacquainted.

The traffic between the Spaniards and Indians was carried on very peaceably: the former kept constantly on their guard, ready to defend themselves if attacked; while the latter contented themselves with stealing all they could, secretly if they were not observed, openly if they

thought themselves the stronger. To preserve tranquillity, the Spaniards shut their eyes on petty thefts: but if any were committed, which they would have seriously felt, they detained either some canoe, or some person of distinction, till what they had lost was restored: but all this was done, without spilling a drop of blood.

In some of the Indians the desire of procuring iron, cloth, or other stuffs, was stronger than parental affection: they sold their children for a few yards of cloth, or pieces of iron hoops. The Spaniards purchased in this manner three boys, one of four years old, one of five or six, and the other of nine or ten, not to make slaves of them, but Christians. They hoped likewise to gather from them some useful information respecting the country and its inhabitants. These children were so well pleased to be with the Spaniards, that they hid themselves when their fathers came on board, lest they should be returned to them. Two little girls also were bought with the same views, one very ordinary, about seven or eight years old, the other younger, and handsome, but ill, and almost dying.

The oldest of the boys appeared to possess uncommon sagacity and quickness of intellect, and was soon a favourite with all the crew. He made them sensible, by very expressive signs, of the intentions of his countrymen, what they meditated, how they would act, and the objects they proposed to attain. He took the marines by the hand, led them to the stand of arms, put muskets into their hands, and made signs to them to load and fire upon this or that canoe, but to spare such and such a one, which belonged to friends. The environs of this harbour therefore are inhabited by different tribes, enemies to one another.

At new and full moon the tide rises in Port de la Cruz seventeen feet three inches, English measure; and it is high water a quarter after twelve at noon: the lowest tides are fourteen feet three inches: and the night tides exceed those of the day one foot nine inches.

The south, south-east, and south-west winds being constantly accompanied with drizzling rain and continual showers, the Spaniards removed from the Port of la Cruz, on the 15th of June, to that of San Antonio, with the view of getting out of the bay more easily with the first north-westerly wind : but this they could not accomplish till the 1st of July.

On the 16th of July they discovered a shoal half a league to leeward, which they reckoned to be in the latitude of $59^{\circ} 2'$, and longitude $149^{\circ} 46'$ *. At a distance they saw mount St. Elias; the summit of which they compare for height with that of Orisaba.

The 17th, at noon, Cape St. Elias bearing west 40° north, distant three leagues, they calculated its latitude to be $59^{\circ} 53'$, and its longitude $149^{\circ} 20'$. The charts place an island in the vicinity of this cape : and the point of this island nearest the cape bore north 18° west, distant five leagues. The two points form between them the entrance of a channel three leagues wide. From the cape, the coast runs north a little inclining to the west. In this part they observed large bays, in which they imagine there must be harbours very well sheltered.

Maurelle says this island is larger than it is represented on the charts. When the Spaniards were half a league from it, they discovered a shoal to the south-west.

On the 18th they reconnoitred a vast bay to the westward of Cape St. Elias. This bay ran ten leagues into the land. On the 20th they were accosted by two canoes of singular structure. The timber-work consists of very slender planks, bound together by tolerably strong cords, leaving spaces between them, giving them the appearance of the skeleton of a canoe. This skeleton is completely covered with skins, leaving only a

* All the latitudes are north ; the longitudes, west of Paris. It has already been observed, that on the longitudes no dependance is to be placed.

round aperture in the upper part, the edges of which serve as a girdle to him who rows it; and to prevent the water from getting into this opening, the boatman puts on a skirt of bladders, neatly sewed together, and carefully tied over the edges of the opening. It may be supposed that these canoes are extremely light. Their shape is exactly that of a harp; their bow having the same curve as is made in the harp for fastening the strings.

The Indians in these canoes were clothed in a coat of skin, which defended them sufficiently from the cold. Their hats resembled those of the inhabitants of port Bucarelli. For ear-rings they wore large glass beads. Their fishing tackle consists of arrows made as neatly as if turned in a lathe, a long pole, a blown bladder, a harpoon pointed with bone, and a long cord made of gut, and properly twisted. They dart their harpoon at the seal or otter: the wounded animal endeavours to dive, but is prevented by the bladder: and the Indian soon draws his prey to him. The young Indians who were taken on board at Bucarelli endeavoured to converse with these, but they did not understand each other.

These two canoes induced the Spaniards to stop off the adjacent coast, where they anchored the 20th of July at midnight; but the next day they sailed for a cove, which lay a league from them to the north. Here they were exposed only to the winds from the south to the north-west; and a little farther within the land they would have been sheltered entirely. This harbour, to which they gave the name of *San Jago*, lies in latitude $60^{\circ} 13'$, longitude $157^{\circ} 52'$. To satisfy themselves whether they lay off an island or the continent, they sent out the long-boat, which, after having sailed six or seven leagues north-north-west, reported, that the coast then trended to the east, whence they concluded, that the land near which they were at anchor was an island*.

* On a serious investigation I am of opinion, that this harbour is near Cape Hinchinbroke. Neither Cook nor Dixon made any observation in the neighbourhood of this cape. The long-boat must have entered a little way into the bay called Rose Bay on Dixon's chart, and seeing it entirely shut up

Six Indian canoes, about forty feet long, and six broad, lined with white skins, and made not very unlike to European boats, paid a visit to the Spaniards. As they approached, they hoisted three flags, the first carnation, the second white, the third blue: but they struck them before they came alongside. The Indians were accompanied by their wives, who were distinguished by glass beads, or some other bauble, hanging from each side of the mouth. In other respects they were dressed much like the women of Bucarelli.

The captain going with the long-boat a fishing, it was in a very little time filled with a fish agreeable enough to the palate, which they called *pargo mulato*: but the most plentiful kind here is salmon; the *pargo mulato* abounding only at the heads of the little creeks along the shore.

The Indians inhabiting this country are robust, tall, proportionably large, industrious, and thieves. The copper, with which all their arrows are headed, led the Spaniards to suppose, that they had mines of this metal.

On the 28th of July our navigators got under way to double a point which they saw to the south-west 5° south, distant eleven leagues (probably the southern point of Montagu island). They wished to keep in sight of the land, but the rain and mist sometimes prevented it.

On the 30th they lay to till the next day, when they found themselves in the neighbourhood of a group of islands extending from the south-south-west to the south-south-east. They anchored on the 1st of August to the south of one of these islands, to which they gave the name of *Isla del Regla*. They place it in the longitude of $155^{\circ} 52'$ by estimation, latitude

toward the east, continued her course towards the opposite shore on the north-north-west. I imagine, too, that the transcriber may have written $157^{\circ} 52'$ instead of $153^{\circ} 52'$; as the manuscript abounds with errors.

59° 8' by observation *. Don Maurelle supposes, that these islands form what is called *Cap de St. Ermogène* on the chart of Bellin, engraved in 1766. The latitude of both is the same. The Russians, seeing this group at a distance, may not have observed the intermediate channels, dividing it into several islands, and thus took it for a point of the continent. There were many other islands to the south of Isla del Regla.

On the 3d of August, the sky being clear, they saw to the north-west 7° north a mountain quite covered with snow, and certainly higher than the pike of Teneriffe, more than twenty leagues distant from them. In the evening, by the twilight, it was perceived to throw out torrents of thick smoke. The aperture from which this smoke issued was a little to the east of the summit of the mountain, which they judged to be a volcano. Near this mountain another very lofty one was observed, on which no appearance of snow was to be discerned. This lay west-north-west 8° west, distant fifteen leagues. Lastly two others were perceived, the larger of which bore west-south-west 4° south, distant 13 leagues. Both these, though lofty, were less so than the former; yet both were entirely covered with snow.

On Isla del Regla were found some small huts, seals recently flayed, a great number of birds' heads, but not one inhabitant. After two or three days' stay, a canoe appeared off one of the neighbouring points: the Indians uttered a few words, but they would not come alongside the frigates.

This island was the limit of the expedition of the Spaniards. They

* On the chart of Prince William's Entrance, in the 3d volume of Cook's third Voyage, there is a place where this group of islands may be supposed to lie. It is to the south-west of Montagu Island toward the latitude of 59° 8', longitude from 210° 30' to 210° 40' east of Greenwich, or 151° 40' to 50' west of Paris. Cook would have passed these islands about fifteen leagues to the westward and Dixon as much to the eastward: a distance at which they may be too low to be visible. Perhaps, too, they may lie farther west than was supposed.

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left it on the 7th of August, and came to an anchor at San Blas on the 27th of November. From Cape St. Elias to Isla del Regla they laid down with the most scrupulous accuracy all the islands, capes, and bays they descried; but the winds and currents, very frequent and very violent in these latitudes, drove them from the coast oftener than they wished, and were disadvantageous to the accuracy of their reckoning. Yet, if they publish the chart which they constructed from the bearings they took, their observations, added to those of Cook, la Pérouse, and Dixon, will contribute not a little to improve the geography of this part of the coast of North-America.



VOYAGE

ROUND THE WORLD,

In the Years 1785, 1786, 1787, and 1788.

CHAPTER I.

Object of the Expedition—Fitting out of the two Frigates—Stay in the Harbour of Brest—Passage from Brest to Madeira and Teneriffe—Stay at these two Islands—Excursion to the Peak—Arrival at Trinidad—Touch at the Island of St. Catherine on the Coast of Brazil.

THE ancient spirit of discovery appeared to be extinct. The voyage undertaken by Ellis, to Hudson's Bay, in 1747, had not answered the expectations of those who advanced money for the enterprise. On the 1st of January 1739, captain Bouvet imagined that he saw land in latitude 54° south, but it is now probable that it was a field of ice only; and by this mistake the progress of geography was considerably retarded. The framers of systems, who sit down tranquilly in their closets, and there trace the form of continents and islands, had concluded, that the supposed Cape Circumcision was the northern point of a southern continent, the existence

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1785. of which they conceived capable of demonstration, because necessary, in
August. their opinion, to the equilibrium of the globe *.

The failure of these two voyages was naturally calculated to damp the ardour of individuals who, actuated by a spirit of curiosity alone, had been led to sacrifice large sums in enterprises, which had long ceased to engage the attention of the different maritime powers of Europe.

In 1764 the British government gave orders for a new expedition, the command of which was given to commodore Byron. The accounts of this voyage, as well as those of Wallis, Carteret and Cook, are already sufficiently known.

* The partisans of the existence of a southern continent will consider la Pérouse's assertion to be hazarded. Without pretending, however, that Cape Circumcision, discovered by Lozier Bouvet, belongs to a field of ice rather than to an island *, and without attempting to resolve the idle problem of the existence of a southern continent, since it must be situated only in a latitude which will for ever keep it insulated from the rest of the globe, I will venture to affirm that Cook's first voyage towards the south pole has sufficiently decided the question, and that le Monnier's dissertation, to prove that Cook did not search for Cape Circumcision in its true longitude, has now lost its importance †. While I thus make my confession of faith, in this respect, and acknowledge that I believe in the existence of a southern continent, I do not think that it is necessary to the equilibrium of the globe. What effect, indeed, could the weight of so small a *protuberance* produce on so enormous a mass as the globe, where the smallest difference in the homogeneity of its internal parts would be a sufficient compensation for superficial solidity ?

Though captain Cook hopes, that *he shall hear no more of a southern continent* ‡, it will, perhaps, be attended with utility, some centuries hence, to ascertain what progress the ice may have made towards the equator, thus to bring Buffon's ingenious system of the gradual refrigeration of the globe to a proof. But several ages would be necessary to obtain a probable result ; for in different years and at the same seasons, navigators have seen ice in higher or lower latitudes. The whale fishers, it is said, who go annually to Spitzbergen, once proceeded so far north as within a single degree of the pole. It appears also that Lorenzo Ferrer de Maldonado, whom I shall have occasion to mention hereafter, sailed through a north passage, which our most enterprising navigators have never been able to discover, as they were always stopped by the ice. (French Editor.)

* Captain Cook having gone very far to the south of the land discovered by Bouvet, it is evident that Cape Circumcision cannot belong to a southern continent.

† See *Mémoires de l'Académie des Sciences de Paris* for 1776, p. 665 ; for 1779, p. 12 ; and Cook's second and third Voyages.

‡ Cook's third Voyage.

In November 1766, M^r de Bougainville sailed from Nantz with the *Boudeuse* frigate and the *Etoile* flute. Pursuing nearly the same course as the English navigators, he discovered several islands, and the account of his voyage being written in an interesting manner, the same taste for discovery was thereby excited in the French, which had lately been revived with so much energy in England.

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In 1771, M^r de Kerguelen was dispatched on a voyage towards the southern continent, the existence of which, at that period, no geographer had ventured to dispute; and, in the month of December of the same year, he descried an island, but was prevented by the badness of the weather from completing his discovery. Prepossessed with the ideas that pervaded the minds of all the learned of Europe, he had no doubt that what he had seen was one of the capes of the southern continent; and in his eagerness to announce this intelligence, he determined to return instantly home. He was received in France as a second Columbus, and a man of war and a frigate were immediately equipped to continue so important a discovery. This extraordinary choice of vessels, were there no other proofs, would be sufficient of itself to show, how far enthusiasm is capable of superseding in human beings the use of reason and reflection. M^r de Kerguelen had orders to steer the same course as before, and to make a survey of the supposed continent he had discovered. The result of this second voyage is known to every one; but even Cook, the most skilful of navigators, in such an enterprise, with a ship of 64 guns and a frigate of 32, the crews of which amounted to 700 men, would have found it impossible to succeed: it is probable indeed he would not have accepted the command, or, if he had accepted it, would have caused a different plan to be adopted. M^r de Kerguelen, however, returned to France no better informed than before; and the king dying in the course of the expedition, all farther thoughts of discoveries were abandoned. The war of 1778 also turned the attention of the public to pursuits of a very different nature; but amidst these pursuits, it was not forgotten, that our enemies had two ships at sea, the *Discovery* and the *Resolution*, and that captain Cook, while engaged in extending the

1785. sphere of human knowledge, was intitled to the protection and friendship
August. of every country on the globe*.

The principal object of the war, begun in 1778, was to secure the tranquillity of the seas, and by the peace of 1783 this object was fully accomplished. The same spirit of justice which had led France to take up arms, that the flags of the weakest maritime nations might be equally respected with the most powerful, naturally directed itself, during the negotiations for peace, to whatever might tend to the general benefit of mankind. The sciences, by softening the manners of men, have, perhaps, contributed more than wise and beneficial laws, to the happiness of society.

The voyages of different English navigators, by enlarging the bounds of knowledge, had merited the just admiration of the world, and the character and talents of captain Cook, in particular, held a very distinguished rank in the estimation of Europe: but, in so vast a field, there will remain for ages new knowledge to be acquired; coasts to be explored; plants, trees, fishes, and birds to be described; minerals and volcanoes to be examined; nations to be studied, and perhaps to be rendered happier, since the introduction of a single farinaceous plant, of one new species of fruit only, might prove to the inhabitants of the islands in the southern ocean a source of inestimable benefit †.

* I cannot omit this opportunity of recalling to the recollection of the reader a circumstance as glorious to the French nation as to the individual who, amidst the horrors of a war politically necessary, became the object of it.

When hostilities were commenced, in 1778, against England, orders were issued to all French ships which might fall in with the *Discovery* and *Resolution*, commanded by captain Cook, to suffer them to proceed on their voyage unmolested, and instead of treating them as enemies, to give them every assistance of which they might stand in need.

It is thus that a great nation shows a sacred respect for the progress of science and of useful discoveries. (French Editor.)

† Can the benefits arising from the introduction of a new farinaceous plant, a new species of fruit, or even of domestic animals, be compared with the many evils that must result to these people, by the introduction, at the same time, of European manners and customs?

If we consider this problem in a philosophical, political, and even religious point of view, examine

These reflections gave rise to the project of a new voyage round the world, and men versed in every branch of knowledge were engaged for the expedition. M^r Dagelet, of the Academy of Sciences, and M^r Monge*, both professors of mathematics at the Military School, embarked in the capacity of astronomers, the former in the Boussole and the latter in the Astrolabe. M^r de Lamanon, of the academy of Turin, and correspondent of the Academy of Sciences, was charged with that department of the natural history of the earth and it's atmosphere, which bears the name of geology. The abbé Mongès, regular canon of S^t Geneviève, and editor of the *Journal de Physique*, undertook to examine and analyse mineral substances, and to assist in the different branches of natural philosophy. M^r de la Marti-

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what those islanders actually possess, and reflect that their desire for new objects can only be produced by a knowledge which does not exist among them, we shall, in my opinion, conclude with wishing, that they may long enjoy their present happiness, and that unalterable tranquillity, which is founded upon content of mind, the exercise of the benevolent affections, and the observance of laws derived from the pure source of nature.

The following passages from Cook's third voyage will tend to confirm my opinion :

"When the Adventure arrived first at Queen Charlotte's sound, in 1773, M^r Bayly fixed upon this place for making his observations ; and he, and the people with him, at their leisure hours, planted several spots with English garden seeds. Not the least vestige of these now remained. Though the New Zealanders are fond of potatoes, it was evident that they had not taken the trouble to plant a single one (much less any other of the articles which we had introduced), and if it were not for the difficulty of clearing the ground where potatoes had been once planted, there would not have been any now remaining." Vol. I. page 125.

"These two chiefs became suitors to me for some goats and hogs. Accordingly I gave to Matahouah two goats, a male and a female with kid ; and to Tomatongeaouoranuc, two pigs, a boar and a sow. They made me a promise not to kill them ; though I must own I put no great faith in this. The animals which captain Furneaux sent on shore here, and which soon after fell into the hands of the natives, I was now told were all dead." *Ibid.* p. 131.

"He (Tawehiarooa) said, that the captain of her, during his stay here, cohabited with a woman of the country, and that she had a son by him, still living, and about the age of Kokoa, who, though not born then, seemed to be equally well acquainted with the story. We were also informed by Tawehiarooa, that this ship first introduced the venereal disease amongst the New Zealanders. I wish that subsequent visitors from Europe may not have their share of guilt in leaving so dreadful a remembrance of them among this unhappy race." *Ibid.* p. 141. (French Editor.)

* During the passage from Brest to Teneriffe, the health of M^r Monge became so deranged, that he was obliged to be put on shore at that island, and return to France.

1785. nière, physician of the college of Montpellier, and recommended by M^r de
August. Jussieu, filled the botanical department, having a gardener from the king's garden for his assistant, a M^r Collignon, (chosen by M^r Thouin), whose office was to take care of such plants as it might be possible for us to bring back to Europe. The task of executing drawings of whatever related to natural history devolved upon the two M^r Prevosts, uncle and nephew. M^r Dufresne, an eminent naturalist, and particularly skilled in the art of classing the different productions of nature, was sent to us by the comptroller general. And, lastly, M^r Duché de Vancy received orders to embark for the purpose of painting dresses and landscapes of the different countries we might visit, and such things, in general, as it is often found impossible to describe.

All the learned bodies in the kingdom vied with each other, on this occasion, in manifesting their zeal for the progress of the arts and sciences. The Academy of Sciences, and the Society of Medicine, addressed each a memoir to the marshal de Castries, pointing out what observations it would be of most importance to make in the course of the expedition. The abbé Tessier, of the Academy of Sciences, suggested a method of preserving fresh water from corruption. From M^r de Fourni, civil engineer, we received a paper containing his observations on the nature of trees, and on the level of the sea; and from M^r le Dru, a memoir, in which he recommended to us to make every possible observation on the magnetic needle, in different latitudes and longitudes; and he added a dipping needle of his own construction, the result of which he begged we would compare with that of the two dipping needles lent us by the commissioners of the British board of longitude. Upon this subject I beg leave to express my particular obligations to Sir Joseph Banks, who, upon hearing that M^r de Monneron had failed in his attempts to procure a dipping needle in London, readily and voluntarily lent us the two which had been employed by the celebrated captain Cook, which I received with feelings bordering almost upon religious veneration for the memory of that great and incomparable navigator.

M^r de Monneron, a captain in the corps of engineers, who had accompanied me in my expedition to Hudson's Bay, embarked in the quality of chief engineer. He had been induced, by his friendship for me as well as his taste for travelling, to request this office, and he was charged with the business of drawing plans and examining the positions of the different places which might be visited, with M^r Bernizet, geographical engineer, for his assistant.

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The last thing I have to mention are the charts destined for our use, which were executed by M^r Fleurieu himself, director of the port and arsenals, and formerly a captain in the navy: and to these charts, M^r de Fleurieu added a whole volume of the most learned notes and observations on the different voyages undertaken from the time of Columbus to the present period. The knowledge I derived from his valuable labours, and the repeated marks of friendship which he conferred upon me, will not suffer me to withhold this public testimony of my gratitude*.

The marshal de Castries, minister of the marine, who had obligingly recommended me to the king for this command, sent the most positive orders to all the ports, to furnish us with whatever might be deemed requisite to the success of the expedition; and lieutenant-general D'Hector, commandant of the naval department at Brest, entering into his views, superintended every thing, even the most minute parts of the equipment, with the same care and attention as if the command had been his own. Having been empowered to appoint my own officers, I chose, for the command of the *Astrolabe*, M^r de Langle, a post captain, who had commanded the *Astrée* during my expedition to Hudson's Bay, and who, on that occasion, had given me the most convincing proofs, not of his talents only, but

* The loss of our navigators, an event regretted by all Europe, has been particularly unfortunate to the arts and sciences, as the immense collection made by the different men of science, and a part of the memoirs, perished with them. The reader must not expect to find in the volume of plates and charts, all the details which the journal seems to announce. This voyage, interesting even in its present state, would have afforded, had not this disaster taken place, a complete body of information of the most valuable kind. If any hope can yet be indulged, it is a hope extremely weak, and which becomes every day still weaker. (French Editor.)

1785. of the firmness and energy of his character. A hundred officers having
August. voluntarily offered themselves to M' de Langle and myself to serve in the expedition, we had an opportunity of selecting as many men of know intrepidity and professional skill, as we wanted.

At length, on the 26th of June, my instructions were delivered to me, and on the first of July I set out for Brest. I arrived there on the 4th, and found the equipment of the two frigates already in great forwardness. The shipping of a variety of things had been deferred, because it was necessary that I should make a choice between articles in request among the savages, and provisions, of which it was thought I might wish to have a supply for several years. I preferred, however, the former, reflecting that they would be the means of continually procuring us live stock, and that in the course of so long a voyage, the provisions of the ship would necessarily deteriorate, and become, at last, perhaps, totally unfit for use.

Beside a boat with a deck*, which was in pieces, ready to be put together as occasion might require, and of about twenty tons burthen, we had on board two pinnaces (*chaloupes biscayennes* †), a spare main-mast, a tiller and a capstan. The quantity of things, indeed, which I found in my own ship, and which had been stowed by M' de Clonard, my first captain, with a zeal and intelligence of which he had so often given me proofs, was incredible; and the Astrolabe had been furnished with precisely the same articles. On the 11th, we were in the road, our vessels so encumbered that it was impossible to heave on the capstan; but we had a favourable season for our departure, and were in hopes of reaching Madeira without encountering bad weather. M' d'Hector had ordered us to anchor in the road with port-moorings, that we might have no-

* Or *boyer*, a kind of very strong, flat-bottomed vessel, used in Flanders and Holland, and extremely proper for inland-navigation. (French Editor.)

† *Barca longa*, boats unusually long and very narrow at the extremities, adapted for sailing when there is a hollow sea. (French Editor.)

thing to do but to slip our cables whenever the wind should permit us to sail.

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On the 12th we mustered our crews; and the same day were sent on board both vessels the astronomical clocks, for ascertaining, in the places where we might stop, the daily rate of going of our time-keepers, which had been on board, and under a course of observation, for nearly a fortnight. *Messrs* Dagelet and Monge, as well as the other men of letters and artists, had preceded me to Brest, and had attended to the going of the time-keepers even previous to the arrival of the two astronomers *Messrs* de Langle and d'Escures; but the astronomical clock with which they had been compared was unfortunately found to be so very defective, that it was necessary to do all the work over again.

In the evening of the 13th *M* Dagelet delivered to me the following note.

“ On our arrival at Brest, we found an astronomical station established in the Intendant's garden, where *Messrs* de Langle and d'Escures employed themselves in making observations, to determine the rate of going of the time-keepers. But, as the instruments of the academy of Brest, and in particular the astronomical clocks, were in a very deplorable condition, they perceived, after several days' observation, that it was necessary to make the relative comparison of the time-keepers, by referring them all to N° 25*, which was in the observatory. When our instruments were erected on shore, I determined the going of my pendulum clock by altitudes of the sun and stars, comparing every day the time-keepers, N° 18 and 19, by means of signals made on board, and I thence formed the following table of their daily rate of going.”

* All the time-keepers put on board the two frigates were invented and constructed by Ferdinand Berthoud, who distinguished them by numbers. (French Editor).

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DAYS OF THE MONTH.	N ^o . 18.			N ^o . 19.		
	LOSS UPON THE MEAN TIME OF PARIS.			LOSS UPON THE MEAN TIME OF PARIS.		
June 28 - -	36'	48"	8	27'	51"	0
30 - -	37	07	1	27	47	7
July 1 - -	37	19	0	27	45	0
2 - -	37	31	0	27	44	2
3 - -	37	39	5	27	45	4
4 - -	37	51	8	27	44	0
5 - -	38	05	0	27	42	0
6 - -	0	0	0	27	42	1
7 - -	38	36	7	27	42	1
8 - -	38	49	3	0	0	0
9 - -	39	03	0	27	48	8
10 - -	39	13	6	27	42	5
11 - -	39	27	0	stopped		
12 - -	0	0	0	0	36	6
13 - -	0	0	0	0	36	4

We were detained in the road by westerly winds till the 1st of August. As the weather in the mean time had been foggy, with showers of rain, I was uneasy, fearing that the health of the crew might be injured by the humidity. In the course of nineteen days, however, we sent on shore one man only, who was ill of a fever, but we discovered six sailors and one soldier attacked by the venereal disease, who had escaped the examination of our surgeons.

1. I sailed from Brest road on the 1st of August. In my passage to Madeira, where we came to anchor on the 13th, nothing occurred that is worthy of detail. The wind had been constantly favourable, a circumstance highly necessary for our vessels, which, being too much by the head, were extremely unmanageable. During the fine nights of this passage, M^r de Lamanon observed those luminous points visible in the water of the sea, and which arise, in my opinion, from a solution of marine bodies. If this light were produced by insects, as some philosophers assert,

they would not be dispersed in so great profusion from the pole to the equator, but would affect only particular climates *.

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We were scarcely at anchor, when Mr. Johnston, an English merchant, sent a canoe on board laden with fruit. Several letters of recommendation to that gentleman from London, had preceded us, which occasioned me the greater astonishment, as I was utterly unacquainted with the persons by whom they were written. The reception we experienced from Mr. Johnston was in every respect so kind and hospitable, that we could not have expected a better from our best friends or nearest relations. Having paid a visit to the governor, we afterwards dined at his house. Next day we breakfasted at the charming country-seat of Mr. Murray, the English consul, and returned to town, to dine with M. Montero, *chargé des affaires* of the French consulate. During the whole of this day, we enjoyed all the pleasure which select company and the most polite attention can afford; and at the same time were delighted with the situation of Mr. Murray's country-seat, from the beauties of which our attention could only have been diverted by the arrival of the consul's three charming nieces, who came to prove, that nothing was wanting in this enchanting abode. Had the circumstances in which we were placed been less urgent, nothing could have been more agreeable to us than to have passed a few days in this island, where we were entertained in so

* After the result of the experiments presented by Rigaud in 1768 to the academy of sciences at Paris, no doubt can be entertained of the existence of *polypi* or luminous animals in the water of the sea. I do not know upon what la Pérouse can found an assertion, combated by Godeheu, who observed, at the Maldives, and on the coast of Malabar, places where the sea is more luminous than in the latitudes of which our navigator is speaking, that the water was covered with small living luminous animals, which emitted a kind of oily liquor, that floated on the surface, and diffused, when agitated, a phosphoric light: but for myself, I believe in the existence of these animals, which is confirmed by the observations of Nollet, Ray, Vianelli, Grisellini and others. I am of opinion, also, that the phosphoric oil of certain fishes, being carried to the surface of the water, produces in part that light which is every where observable in the sea.

I can adduce in support of my opinion the effect of the oil of the bonetta, which becomes luminous when shaken. See also Forster's observations on the phosphoric light of sea-water at the end of Cook's second voyage, and those of Lalande, in the *Journal des Savans*, 1777. (French Editor).

1785. friendly a manner ; but the object of our touching there could not be attained. The English had raised the price of wine to so exorbitant a height, that we found it impossible to procure any for less than thirteen or fourteen hundred livres * a cask, containing four barrels, while the same quantity at Teneriffe would cost only six hundred †. I gave orders, therefore, for every thing to be prepared for sailing on the following day, which was the 16th of August.

The sea-breeze did not cease blowing till six in the evening, when we weighed anchor and instantly sailed. Before I departed, I received from Mr. Johnston another present, consisting of a hundred bottles of sweet, and half a barrel of dry wine, rum, preserved oranges, and a prodigious quantity of all kinds of fruits. From the time of my arrival at Madeira, every moment of my stay had been marked, on his part, by the most delicate and polite attentions.

Our run to Teneriffe occupied only three days, and we came to anchor on the 19th at three in the afternoon. On the morning of the 18th I had sight of Salvage isle, and sailed along its eastern side, at the distance of about half a league. The coast is perfectly safe, and, though I had no opportunity of sounding, I am convinced that there is a hundred fathoms of water, within a cable's length only of the shore. This island, which is totally parched and does not produce a single tree, appears to be formed of different strata of lava and other volcanic substances. We took bearings from several points in order to determine its position.

The different observations of M^{es}rs Fleurieu, Verdun and Borda, as to the islands of Madeira, the Salvages, and Teneriffe, are so perfectly satisfactory, that the object of ours was merely to prove our instruments, and ascertain the rate of going of our time-keepers, which had been so far determined at Brest by the observations of M^r Dagelet, that we could depend on the longitude which they might give for several days together.

* About £.54 or £.58.

† £.25.

Our anchoring at Madeira afforded us an excellent opportunity of judging of the degree of correctness we had reason to expect from them. The longitude which we observed within sight of the land, compared with that of the town of Funchal, differed only three minutes of a degree from that determined by M^r Borda.

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The short stay we made at that island did not permit us to fit up an observatory. M^{esses} Dagelet, d'Escures, and Boutin, took a few bearings only from the anchoring place, of which I caused no plan to be laid down, as it may be found in a variety of printed voyages. On the 18th we were employed in taking bearings of the Salvages, the latitude of which I may venture to fix at $30^{\circ} 8' 15''$ north, and the longitude at $18^{\circ} 13'$ east.

The moment I arrived at Teneriffe I employed myself in erecting an observatory on shore. On the 22d of August, our instruments were placed in it, and we determined the rate of going of our astronomical clocks, by corresponding altitudes of the sun or stars, in order to ascertain as speedily as possible the rate of going of the time-keepers on board the two frigates. A particular account of these operations will be found at the end of this work. The result of our observations showed, that the error of the time-piece N^o 19 had only been $18''$ slow from the 13th of July, the last day of our observations at Brest; and that our smaller time-keepers, N^o 29 and N^o 25, had lost also, the first $1' 0.7''$, and the second only $28''$. Thus, in the course of forty-three days, the greatest error was only a quarter of a degree of longitude. From observations made for several days together, and a regular series of comparisons, we settled the new daily movement of these time-keepers. M^r Dagelet found that N^o 19 gained $2.55''$, in twenty-four hours; N^o 29, $3.6''$; and N^o 25, $0.8''$; and from these elements he constructed a table of their apparent movements, regard being had to the necessary corrections from the variations produced by the effects of the temperature of the air, according to the different degrees of the thermometer and of the arcs of the balance-wheel. M^r Dagelet had some doubts as to the manner of constructing the table of the variation of N^o 19, from the few *data* supplied by the experiments made at Paris. He was therefore of opinion,

1785. that it would be extremely convenient for those who use time-keepers at sea,
August. if a greater number of experiments were made, and fewer terms left to be calculated in the interpolations, especially when the arcs of the balance-wheel enter into this kind of correction. In that case a table with a double entry will be required, and doubts will arise respecting the manner in which the ordinates of the curve ought to vary. On the 27th and two following days, he made experiments with a simple pendulum, and observed the number of oscillations in a given time, in order to determine the force of gravitation in different latitudes. Several observations relative to the latitude and longitude were also made at Santa Cruz in Teneriffe, which I think may be fixed, the longitude at $18^{\circ} 36' 30''$ west, and the latitude at $28^{\circ} 27' 30''$ north. We terminated our labour by experiments on the dipping needle; but found very little agreement in the results, which are inserted only to prove, how far that instrument still is from the degree of perfection necessary for it to be depended on by observers. We are inclined to think, however, that the quantity of iron with which the soil of the island of Teneriffe is impregnated, may have contributed, and that considerably, to the enormous differences we remarked. These various results, as I have already said, are inserted at the end of the work.

30. On the morning of the 30th of August, we set sail with a pretty fresh breeze from the north-north-east. We had taken on board each vessel sixty pipes of wine, which obliged us to unstow half of our hold in order to get at the empty casks which were to contain it. This business occasioned us a loss of ten days: but the principal cause was the tardiness of the merchants who furnished the wine, which came from Orotava, a small town on the other side of the island.

I have already given an account of the manner in which our astronomers had employed their time. Our naturalists, wishing in like manner to take advantage of our stay in the road of Santa Cruz, set off on an excursion to the Peak, accompanied by several officers of the two ships. Mr de la Mar-

tinière botanised by the way, and discovered several curious plants. M^r de Lamanon measured the height of the Peak by his barometer, which, on the summit of the mountain, fell to 18 inches $4\frac{3}{10}$ lines. By an observation made at Santa Cruz the same instant, it stood at 28 inches 3 lines. The thermometer which, at Santa Cruz, rose to $24^{\circ}\frac{1}{2}$, kept constantly at 9° on the summit of the Peak. I shall leave it to the curious to calculate the height for themselves. This method is so incorrect that I choose rather to give the *data* than the results*. M^r de Monneron, captain in the corps of engineers, undertook also a journey to the Peak, in order to determine it's height by taking levels down to the sea shore. This was the only method of measuring it which had never before been attempted, and no local difficulties, unless altogether insurmountable, could have prevented his succeeding, from his very great expertness in operations of this nature. When arrived on the spot he found the business by no means so arduous as he had imagined, and in a single day had actually completed the most difficult part. He had arrived at a kind of plain, which, though still at a great elevation, was of easy access, and already flattered himself with the hopes of soon seeing the end of his labour, when his guides started difficulties which it was impossible for him to overcome. Their mules had not drunk for three days, and the muleteers could be prevailed on neither by entreaties nor rewards to make a longer stay. M^r de Monneron was therefore obliged to abandon a work, which he considered as finished, and which had been attended with immense labour and no inconsiderable expense; for he had been under the necessity of hiring seven mules, and eight men to carry his baggage and assist in the operation. That he might not, however, lose entirely the fruits of his labour, he determined the principal points; and a day would now be sufficient to complete the levels, which

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* Those who may be desirous of making the calculations will find the *data* which are here wanting in almost every work on Natural Philosophy; if they would attain, however, to any accuracy in this mode of measuring heights, which is extremely liable to error, they must not forget to make the corrections which will be required by the temperature of the air. The difference of the logarithms of the heights of the barometer in lines, gives the height in toises at $16^{\circ}\frac{3}{4}$ of the mercurial thermometer, which marks 80° for the heat of boiling water: $\frac{1}{215}$ must be deducted for each degree of cold. De Luc, *Recherches sur les modifications de l'atmosphère*. (French Editor.)

1785. would afford a more satisfactory result than any that has yet been given by
August. travellers*.

During our stay in the road of Santa Cruz, the Marquis de Branciforte, governor-general and commander in chief of all the Canary islands, showed us every possible attention.

We were unable to get under way till three in the afternoon of August 30. Our decks were still more encumbered with stores than when we departed from Brest; but they would now diminish daily, and we had nothing in future to care for but wood and water, till our arrival at the islands of the South Sea. I trusted that I should be able to provide myself with both these articles at the island of Trinidad; for I was determined not to touch at the Cape de Verde islands, which, at this season, are extremely insalubrious, and the health of our crews was naturally my first consideration. To preserve it, I gave orders that the between-decks should be fumigated, and the hammocks be taken down every day and aired from eight o'clock in the morning till sun-set; and that every one might have

* The result of de Monneron's labours which are here alluded to, never reached Europe; but there is reason to believe that he had marked the end of his operations in such a manner as to enable any future traveller to continue them. I conceive him to have made use of a water-level, though that instrument is far from being convenient in rapid descents. Had he finished his task, he would have decided between the various travellers who, having measured the Peak each in his own way, have assigned to it very different degrees of elevation.

However defective, tedious, and difficult this method of measuring heights may be, the inconveniences disappear when it is employed by a man who has had considerable practice in the art. It is certain that the operation would not require more than a thousand stations. Now, if we were to suppose an error of three lines to take place at each station, which is scarcely possible, and that these three lines, instead of mutually correcting each other, were to continue always on one side, a circumstance still less possible, the whole difference, at the end of the operation, would be only three thousand lines, or three toises two feet ten inches. And, even allowing that to be the case, this difference, founded on a supposition so improbable, is nothing in comparison of that which different travellers have found in measuring it; for Heberden makes the height of the Peak - 2,409 toises

Feuillée (see <i>Mémoires de l'Acad. des Sciences</i> , An. 1746, p. 140.)	-	2,213
Bouguer	-	2,100
And Verdun, Borda, and Pingré	-	1,904

(French Editor.)

sufficient time for sleep, the crew was put to three watches, so that eight hours' rest succeeded to four hours' duty. As I had on board no more men than were absolutely necessary, this arrangement could take place only in calm seas, and I was obliged in stormy latitudes to return to the old custom. In our run to the line nothing remarkable occurred. The trade-wind quitted us in 14° north, and blowing constantly from west-south-west till we reached the equator, I was obliged to follow the African coast, which I ran down at the distance of about sixty leagues.

1785.

August.

We crossed the line on the 29th of September in 18° of west longitude. In compliance with my instructions, I could have wished to have been able to cross it more to the west; but the winds fortunately still carried us towards the east. I say fortunately, because, but for this circumstance, I should have found it impossible to make Trinidad; for at the line we fell in with a south-east wind which followed me till I got into $20^{\circ} 25'$ south so that I always steered close to the wind, and was unable to fetch the latitude of Trinidad till I was only about twenty-five leagues to the eastward of it. Had I made Pennedo de San Pedro*, I should have found it an arduous task to double the eastern point of Brazil.

September.

29.

I passed, according to my reckoning, over the shoal on which the Prince was supposed to have struck in the year 1747. We saw no other sign of land than some man-of-war birds, which had followed us in considerable numbers from the latitude of 8° north to that of 3° south. Our ships at the same time were surrounded by tunny fish; but we caught very few of them, for they were so large as to break our lines. Those we hauled on board weighed at least sixty pounds each.

Navigators, who are apprehensive at this season of the year of meeting with calms under the line, are greatly mistaken. Not a day passed without a breeze, nor had we rain more than once; but it was then, indeed, so abundant as to enable us to fill twenty-five barrels.

* My instructions contained no order for making this island; but merely recommended to me, to discover and ascertain it's situation, *if the wind should permit.*

1785. The fear of being carried too far to the east, into the gulph of Guinea,
 September. is equally chimerical. The south-east winds begin to blow early, and drive you too rapidly to the westward. If I had been better acquainted with the navigation of these seas, I should have borne away more with the south-west winds, which constantly prevailed to the north of the line: and I might then have crossed it in the longitude of 10° , and might have run down the parallel of Trinidad with the wind large.

We had left Teneriffe but a few days when we lost sight of that beautiful sky which is to be found only in the temperate zone. A dull whiteness, partaking both of clouds and fog, continually obscured the atmosphere, so that the horizon appeared to be less even than three leagues in extent: but this was only in the day; after sun-set the vapour disappeared, and the night never failed to be fine.

October. On the 11th of October we made a great number of observations of the
 11. moon's distance from the sun, in order to determine the longitude, and to ascertain the rate of going of our time-keepers. By a mean distance, deduced from ten lunar observations made with circles and sextants, we found our longitude to be $25^{\circ} 15'$ west. At three in the afternoon, that given by the time-keeper, N^o 19, was $25^{\circ} 47'$. Observations of this kind were frequently repeated.

12. About four in the afternoon of the 12th, the mean result gave for the longitude of the ship $26^{\circ} 21'$, and the time-keeper, N^o 19, at the same instant, $26^{\circ} 33'$. By comparing these two results, it appears, that the longitude given by N^o 19 was $12'$ farther west than that obtained by observation. It was by means of these operations we determined the position, as to longitude, of the islands of Martin-Vas, and that of Trinidad. We determined the latitudes also very exactly, not only by observing with great correctness the meridian altitude of the sun, but by taking a great number of altitudes near the meridian, and reducing them to the true time of noon found by corresponding altitudes. The greatest errors we can have committed by this method do not exceed $20''$.

The 16th of October, at ten in the morning, we saw the islands of Martin-Vas, five leagues distant, bearing north-west. According to our reckoning they ought to have born west; but the currents, during the night, had drifted us 13' towards the south. Unfortunately, the wind, which till then had been constantly at south-east, obliged me to tack several times to approach these islands, which I passed at the distance of about a league and a half. After having determined their position with great accuracy, and taken bearings in order to be able to trace out on a chart their respective positions to each other, I kept close to the wind on the starboard tack towards the island of Trinidad, which is situate nine leagues from Martin-Vas in the direction of west by south. These islands of Martin-Vas are properly speaking mere rocks, of which the largest is about a quarter of a league in circumference. They consist of three islets separated from each other by narrow channels, and when seen at a distance appear like five head-lands.

1785.
October.
16.

At sun-set I had sight of the island of Trinidad, bearing west 8° north. The wind being still at north-north-west, I spent the night in making continual tacks, keeping on the side east-south-east of the island. At break of day I stood on towards the shore, hoping to find a smoother sea under shelter of the land, and at ten in the morning, when I was distant only two leagues and a half from the south-eastern point, which bore north-north-west, I perceived, at the bottom of a creek formed by this point, the Portuguese flag flying on a small fort, round which were five or six wooden houses. This flag excited my curiosity, and I resolved to send a boat on shore in order to procure information respecting it's evacuation or cession by the English; for I began already to suspect that I should be able to procure at Trinidad neither the wood nor water of which I had need. We could discern no trees, a few here and there excepted, scattered over the summits of the mountains; and the sea every where broke with such fury against the beach, that we could not suppose it possible for our long-boats with any degree of safety to land. I resolved, therefore, to continue to tack during the whole day, that I might find myself next morning far enough to the windward to fetch the anchorage, or at least to send a boat

1785. ashore. In the evening I hailed the *Astrolabe*, communicated my intention, and added, that there was no necessity for observing any order in our tacking, as the creek of the Portuguese settlement might be considered as our place of rendezvous at sun-rise. I told M^r de Langle, that it would then be proper for the vessel nearest the shore, whichever it might be, to send a boat to enquire what supplies we were likely to procure at the island.
18. Next morning, October the 18th, the *Astrolabe*, being only half a league from the shore, dispatched the pinnace commanded by lieutenant De Vaujuas; and M^r De la Martinière and father Receveur, an indefatigable naturalist, accompanied this officer. They landed at the head of the creek between two rocks; but the surf was so high, that both the boat and its crew must certainly have been lost, but for the speedy assistance of the Portuguese, who drew it upon the beach, and, except the grapnel, saved every thing. M^r de Vaujuas counted at this post about two hundred men, of whom fifteen only were in uniforms, and the rest in their shirts. The commandant of this settlement, which, as nothing is cultivated in it, does not deserve the name of a colony, told him, that the governor of Rio Janeiro had ordered possession to be taken of the island of Trinidad about a year ago. That it had been previously occupied by the English was a circumstance of which he was ignorant, or else pretended not to know; but little dependance can be placed upon any thing said to M^r de Vaujuas in this conversation, as the commandant seemed to think himself under the disagreeable necessity of concealing in every respect the truth. He pretended that his garrison consisted of four hundred men, and that the fort was defended by twenty pieces of cannon; whereas we had ocular demonstration that, in the neighbourhood of the settlement at least, there was not so much as a single one mounted. This officer was so extremely apprehensive of our discovering the miserable state of his government, that he would not permit M^r de la Martinière and father Receveur to proceed to any distance from the shore, even in search of plants. After showing every external mark of civility and attention to M^r de Vaujuas, he induced him at last to return on board by telling him, that the island could supply us with nothing; that provisions were sent to him every six months from Rio Janeiro; that there were scarcely wood and water sufficient

for his own garrison; and that it was necessary beside to transport these articles from a great distance among the mountains. His detachment assisted in putting off our pinnace.

1785.

October.

At day-break I had myself also sent off a boat, commanded by lieutenant Boutin, who was accompanied by M^{esses} de Lamanon and Monneron, but with orders not to land, if the Astrolabe's boat should reach the shore before him. In that case, he was to take soundings in the road, and to trace a plan of it as well as the shortness of the time would allow. M^r Boutin, therefore, did not approach nearer than within a musket-shot, the lead always indicating a rocky bottom, mixed with a little sand. M^r de Monneron made as complete a drawing of the fort as if he had been on shore; and M^r de Lamanon was able to ascertain with sufficient accuracy, that the rocks were composed entirely of basaltes*, or melted substances, the remains of some extinguished volcano. This opinion was confirmed by father Receveur, who brought on board a great number of stones, all of a volcanic kind, as well as the sand, which appeared only to be mixed with fragments of shells and coral. As it was evident, from the report of M^r de Vaujuas and M^r de Boutin, that we had nothing to expect as to wood and water from Trinidad, I determined to proceed immediately to the island of St. Catherine on the coast of Brazil, the ancient refreshing place of French ships, in their voyages to the South Sea. Frazier and admiral Anson had found there a sufficiency to supply all their wants. The desire of not losing a single day induced me to prefer the island of St. Catherine to Rio Janeiro, where different formalities would have required more time than would have been necessary to procure wood and water. But in directing my course towards this island, I wished to ascertain the existence of the island of Ascençon, which M^r Daprès lays down a hundred leagues to the west of Trinidad, and only 15' farther south. From the Journal of M^r Poncel de la Haye, who commanded the Renommée frigate, I was convinced that various navigators, and among

* A stone of a close texture, shining on the fractures, striking fire with steel, and proper for being used as a touch-stone. (French Editor).

1785. others Frezier himself, a man of considerable talents, had supposed themselves
October. to have touched at Ascençaon while, in reality, they had been only at Trinidad. Notwithstanding however the authority of M^r Poncet de la Haye, I was of opinion that this point of geography stood in need of farther illustration. The two days of continual tacking off the southern side of Trinidad, had enabled us to take bearings, from which M^r Bernizet traced a plan of that part of the island. It differs very little from that of D^r Halley, which was among the charts furnished by M^r de Fleurieu: but the view drawn by M^r Duché de Vancy is so striking a representation, that it will hereafter be sufficient of itself to prevent navigators, who may get sight of the southern part of Trinidad, from being in any case mistaken. This island presents nothing to the eye but a rock almost entirely barren. A little verdure and a few shrubs are to be seen here and there in the narrow passes among the mountains; and it is in one of these valleys, situated in the south-eastern part of the island, and scarcely a quarter of a mile in breadth, that the Portuguese have formed their settlement.

It was certainly never the intention of nature that this rock should be inhabited, for neither men nor animals could possibly find subsistence upon it; but the Portuguese were no doubt afraid, that some of the European nations might avail themselves of its vicinity to the Brazils, to carry on a contraband trade with that country. For what other motive can be assigned for their eagerness to get possession of an island, which, in every other respect, is a burthen to them?

The south latitude of the large islet of Martin-Vas is	- -	20° 30' 35"
The west longitude by lunar observations	- - - -	30 30
The south latitude of the south-eastern point of the		
island of Trinidad	- - - - -	20 31
The west longitude by lunar observations	- - - -	30 57

18. On the 18th of October, at noon, I steered a westerly course for the island of Ascençaon, till the evening of the 24th, when I resolved to abandon my pursuit. I had then run no less than a hundred and fifteen

1785.

October.

* Lepine, enseigne de vaisseau..

1785.
October.
25.

On the 25th of October we were assailed by a most tremendous storm. At eight in the evening we found ourselves in the very centre of a circle of fire. The lightning flashed from every point of the horizon, and the fire called *Saint-Elmo* settled on the point of the conductor. This phenomenon, however, was not peculiar to my ship; for the *Astrolabe*, though without a conductor, had an appearance of the same kind at her mast-head*. From this day we had a continuance of bad

* I am not astonished that the fire called *Saint-Elmo* settled on the mast-head of the *Astrolabe*, as I know, by la Pérouse's account, that the two ships were always within hail of each other.

This phenomenon is merely the electric fire or the matter of thunder. Every body knows that when the electric fluid enters by a point, it shows itself there in the form of a small luminous spot, but that when it comes out it has the appearance of a luminous pencil or cone of fire. The earth is the grand reservoir of the electric matter, and water one of it's best conductors. I am of opinion, therefore, that when a low cloud, negatively electrified, passes over a ship, the masts and yards must serve it as conductors, and that pencils of fire must be directed towards the cloud from all their extremities.

It is evident that a ship, with a metallic conductor, which communicates immediately with the sea, must have at it's mast-head a much finer pencil of light than another not furnished with such an apparatus, which can convey the electric fluid only by means of wood covered with tar, which is a very bad conductor.

From the same principle, the fire of *Saint-Elmo* must sometimes be seen on the surface of the sea. Those who wish for a proof of this assertion have only to make the following experiments; for the success of which I can vouch, having frequently repeated them in my study.

Electrify a quantity of water contained in a vessel of glass, or of metal, if you prefer it, but in that case the vessel must be insulated; then bring your finger near enough to the surface of the water, not to produce sparks, but that the water may rise, and if you are in a darkened apartment you will see a luminous cone issue from the water and direct itself towards your finger.

In this experiment the finger produces the effect of a cloud. But it may perhaps be said, that the sea does not contain, like the water, a superabundance of the electric fluid. Should this argument give rise to any doubt on the subject, let the following experiment be made:

Take a metal basin filled with water, and let a communication be formed between the basin and the earth by a chain or any other conductor. Electrify strongly the outside of a coated jar, by means of which the inside will be negatively electrified. Insulate the jar, that you may be able to take hold of the outside without discharging it; then hold the metallic ball on the top of the jar at a certain distance from the surface of the water as you before held your finger, and the same effect will be produced as in the former experiment.

It may be easily perceived, however, that the latter experiment is the most demonstrative. The water here, like the sea, is not electrified, but communicates in the same manner with the earth, while the ball of the jar, which represents the cloud, is, like the cloud, electrified negatively.

weather till our arrival at the island of St Catherine, and were all the time enveloped by a thicker fog than we should have met with on the coast of Brittany, in the middle of winter. On the 6th of November we anchored between St Catherine's and the Main, in seven fathoms of water, with a bottom of muddy sand (*Volume of Charts and Plates, N° 2.*); the middle of the island of Alvaredo bearing from me north-east; the island of Flammans, south by east, and the isle of Gal, due north.

During a course of ninety-six days not a single person on board had been sick. The health of the crews was to be impaired neither by change of climate, nor rain, nor fogs; but it must be observed, that all our provisions were of the best quality, that I had neglected no precaution which prudence or experience could suggest, and had beside, to keep up the spirits of the crews, engaged them every evening when the weather would permit, from eight till ten, in the pleasant exercise of dancing.

In the first experiment, if, instead of the finger, you employ the ball of the jar negatively electrified, you will obtain a more striking result, as the electric fluid will make a greater effort to get from the water, which is positively electrified, to the jar, which is in a contrary state.

This principle being once laid down and demonstrated may serve to explain the theory of ascending thunder, a phenomenon much more common than is generally supposed; but this digression, which is foreign to my subject, would lead me too far. (French Editor.)

CHAPTER II.

Description of the Island of St. Catherine.—Observations and Occurrences during our stay.—Departure from St. Catherine's.—Arrival at Concepcion.

1785. THE island of St Catherine extends from $27^{\circ} 19' 10''$ south latitude, to
November. $27^{\circ} 49'$. Its breadth, from east to west, is two leagues, and it is separated from the continent by a channel measuring in the narrowest part only two hundred toises. On the point forming this narrow passage is the town of Nostra-Señora del Destero, the capital of the government, and the residence of the governor. It contains at most about three thousand inhabitants, and four hundred houses. Its appearance to the eye is extremely pleasant.

From Frezier's account of this island, it served, in 1712, as a retreat to vagabonds, who had fled from different parts of Brazil, were nominal subjects only of Portugal, and acknowledged no government whatever. The country is so fruitful, that they were able to subsist without succour from the neighbouring colonies; and they were so destitute of money as to hold out to the avarice of the governor-general of Brazil no temptation, or excite in him the least desire of reducing them to obedience. The ships which touched there gave them, in exchange for their provisions, clothes and shirts only, of which they were in the most dreadful want; and it was not till the year 1740, that the court of Lisbon established on the island, and the adjacent parts of the continent, a regular government. This government comprehends a space of sixty leagues, north and south, from the river San Francisco to Rio Grande. Its population amounts to about twenty thousand souls; but, from the number of children in the different families, I am inclined to think that it will soon be much more considerable. The soil is exceedingly fertile, and produces every kind of fruit, vegetables, and corn, almost spontaneously. It is covered with trees which are always in

verdure ; but the briars and creeping plants are so closely interwoven between them, that it is impossible, without opening a path with a hatchet, to pass through the woods. The traveller is exposed also to the danger of serpents, the bite of which is mortal. The habitations both of the island and the continent are close to the sea. The woods which surround them, from the number of orange and other aromatic trees and shrubs with which they abound, exhale a most delicious fragrance. The country, however, with all these advantages, is poor in the extreme, and so totally destitute of manufactured commodities, that the peasants are almost all naked, or covered with rags. The soil, which is well adapted for the cultivation of sugar, remains unoccupied for want of slaves, which they are not rich enough to purchase. The whale-fishery is very productive ; but it is the exclusive property of the crown, and is farmed by a company at Lisbon, who have three considerable establishments on the coast. They kill annually about four hundred whales, the oil and spermaceti of which are sent to Lisbon by the way of Rio Janeiro. The inhabitants are idle spectators of this fishery, from which they do not derive the smallest benefit. If the government do not interpose with its succour, and grant to the inhabitants such privileges and immunities as may invite commerce to their shores, one of the finest countries in the world will be doomed to a state of lingering wretchedness, and become to the mother country utterly useless.

Vessels may approach St Catherine's without difficulty. A muddy bottom is found at the distance of eighteen leagues in the offing, the depth gradually diminishing till within four cables' length of the land, where it is still four fathoms.

The usual passage is between the island of Alvaredo and the northern point of St Catherine's. There is another, however, between the isle of Gal and the island of Alvaredo ; but with this second passage it is necessary to be well acquainted. Our boats were so much employed during our stay, that I had no opportunity of sounding it. The best anchorage is at the distance of about half a league from Fortress Island.

1785. in six fathoms, on a muddy bottom, the citadel bearing south 3° west,
November. and the fort on the great point south 60° east. A ship lying here will be in the midst of watering-places, which abound both on the island and the continent, and may choose that creek which, according to the wind, may be the easiest of access. This consideration is of great importance, as the navigation of long-boats is difficult in the channel, which, to the narrow passage opposite the town, is two leagues wide. The sea has a strong swell, and always breaks on the lee shore. The tides are extremely irregular. The flood enters by the two channels north and south, and proceeds as far as the narrow passage, but never rises more than three feet.

It appeared as if our arrival had spread consternation through the whole country; for alarm-guns were frequently fired from the different forts; which induced me to anchor immediately, and send a boat on shore with an officer to announce our pacific intentions, and express our want of wood, water, and fresh provisions. M^r de Pierrevert, whom I entrusted with this mission, found the small garrison of the citadel under arms, consisting of forty soldiers, commanded by a captain, who immediately sent an express to the town to Don Francisco de Baros the governor, a brigadier of infantry. This officer had been informed of our expedition by the Lisbon gazette; and a bronze medal I sent him left him no doubt as to the object of my visit. The most speedy and positive orders were accordingly given that we should be supplied with every necessary at the lowest price, and two officers were appointed, one to each frigate, who were entirely at our command, and whom we sent with the purser's steward to purchase provisions from the inhabitants. On the 9th of November I warped the ship towards the fortress, from which I was lying at some distance, and the same day went on shore with M^r de Langle and several officers to pay a visit to the commandant of the post, who saluted me with eleven guns, which were returned by my ship. Next day, I sent a boat, under the command of lieutenant Boutin, to the town of Nostra-Señora del Desierto, to thank the governor for the great abundance which his obliging attentions had been the means of procuring us. M^r de Monneron, M^r de Lamanon and the abbé Mongès accompanied that officer, as did M^r de la Borde

Marchainville and father Receveur, whom M^r de Langle had dispatched on the same errand. They were all received in the most friendly and polite manner. The governor spoke French with fluency and correctness, and his general knowledge and information inspired our party with the utmost confidence. He invited them to dinner, during which he informed them, that the island of Ascençaon did not exist; that the governor-general of Brazil, however, on the credit of M^r Daprès, had the year before sent out a vessel to explore all the positions which had been assigned to that island, and that the captain having discovered no land, it had been effaced from the charts, that an old error might not be perpetuated*. He added, that the island of Trinidad had always formed a part of the Portuguese possessions; and that it had been evacuated by the English on the first request made by the queen of Portugal, the English minister replying, at the same time, that the nation had never given its sanction to the settlement, which had been undertaken merely by private individuals.

1785.
November.

The boats of the Astrolabe and Boussole returned about eleven the next morning, and announced a speedy visit from the major-general of the colony, Don Antonio di Gama. He did not come, however, till the 13th, when he brought me a very polite letter from his commanding officer. The season was now so far advanced that I had not a moment to lose, and our crews were in excellent health. I had flattered myself, on our arrival, that I should be able to supply our wants, and be ready to sail again in five or six days; but the southerly winds and the currents were so strong that

* It would be dangerous to the progress of navigation, and fatal to navigators themselves, to adopt the method of effacing from charts islands formerly discovered, under the pretence of their having been sought for in vain, and of their position being at least uncertain, from the want of means to lay them down correctly on the charts at the time of their discovery.

I express my disapprobation of this practice the more freely, because, a few pages back, I have proved that Ascençaon island actually exists, and because those who expunge an island from the globe, become in some measure responsible for the dangers to which navigators, who may fall in with it, must be exposed, from the security into which they are betrayed by the charts, while its being laid down, even in an uncertain manner, may render the finding it again, by exciting attention, a matter of less difficulty. (French Editor.)

1785. our communication with the land was often interrupted, and my departure
November. unavoidably retarded.

I had preferred the island of St Catherine to Rio Janeiro, merely to avoid the formalities requisite in great cities, which always occasion a considerable loss of time; but I found by experience that my touching here was attended with many other advantages. Provisions of all kinds were in the greatest abundance. A large ox could be purchased for about eight dollars; a hog of a hundred and fifty pounds' weight for four, and two turkies for a single dollar. It was only necessary to cast the net, to haul it up full of fish; oranges were brought on board and sold to us at the rate of five hundred for less than half a dollar; and vegetables also could be procured at a very moderate price. The following circumstance will give an idea of the hospitality of these good people. One of my boats having been overset by the surf, in a creek where I had ordered wood to be cut, the inhabitants, who assisted in saving it, obliged our half-drowned sailors to accept of their beds, while they passed the night themselves upon mats spread upon the ground of the same room in which they exercised this generous hospitality. A few days after they brought on board my ship the mast, grapnel and colours of the boat; articles of great value to them, and which would have been of the utmost service in their canoes. Their manners are gentle, and their dispositions affable, polite and obliging; but they are superstitious, and jealous of their wives, who never make their appearance in public.

While on shore our officers killed several birds, the plumage of which was variegated with the most brilliant colours, and among these a roller of a fine blue, not described by Buffon, though in this country it is very common.

Not being aware of the obstacles by which we were detained in this road for twelve days, we did not carry on shore our astronomical clocks, thinking we should remain here at anchor only for five or six days; but we had the less cause for regret as the sky was continually cloudy. We had no

means, therefore, of determining the longitude of the island, but by distances of the moon from the sun. According to our observations the point of the island of S^t Catherine which lies most to the north-east, may be fixed at 49° 49' of west longitude, and 27° 19' of south latitude.

1785.
November.

On the evening of the 16th, every thing being on board, I sent my dispatches to the governor, who had kindly undertaken to transmit them to Lisbon, where I addressed them to M^r de Saint-Marc our consul-general. Every one had permission to write by the same conveyance to his family and friends. We flattered ourselves that we should be able to sail the next day; but the northerly winds, which would have been favourable to us in the open sea, kept us at the bottom of the bay till the 19th, when I got under way at day-break. A calm, however, coming on, obliged me to anchor again for a few hours, and I did not clear all the islands till towards night.

We had purchased at S^t Catherine's a sufficient number of oxen, hogs, and poultry, to serve the ships' companies at sea for more than a month; and we had added orange and lemon trees to our collection of plants, which, since our departure from Brest, had been preserved in a most thriving condition in boxes, made at Paris under the inspection of M^r Thouin. Our gardener also had provided himself with the seeds of oranges and lemons, cotton, maiz, rice, and of all those vegetables in general which, according to the account of navigators, were wanting to the inhabitants of the South-sea islands, and which were better suited to their climate and manner of living than the productions of the French kitchen-garden. Of the seeds of these, however, we carried out an immense quantity also.

The day of our departure I delivered to the Astrolabe a new set of signals, and which were much more extensive than those we had hitherto used. We were now to navigate in seas covered with fog and exposed to storms; and these circumstances required new precautions. I agreed also with M^r de Langle that our first rendezvous, in case of separation, should be the harbour of Good Success, in the strait of le Maire, supposing us

1785. not to have passed it's latitude on the 1st of January; and the second, Point
November. Venus, in the island of Otaheite. I farther informed him that, as I should not have time to seek for a passage to the southward of Sandwich land, I intended to confine my researches in the Atlantic Ocean to la Roche's Isle Grande. I now regretted the not having been able to begin my expedition by the east; but I dared not alter so materially the plan that had been adopted in France, because I should have had no opportunity of receiving the official letters which had been announced to me, and which might contain orders of the utmost importance.

28. The weather was fine till the 28th, when a violent gale sprung from the east. It was the first we had experienced since our departure from France, and I was pleased to find, that, if our vessels were bad sailers, they could weather a storm, and were capable of resisting the heavy seas we should have to encounter. We were then in $35^{\circ} 24'$ of south latitude and $43^{\circ} 40'$ of west longitude, and I was steering an east-south-easterly course, because I proposed, in my search for Isle Grande, to get into it's latitude at about 10° to the east of the position assigned it in the different charts. I was not ignorant of the extreme difficulty I should have to return; but, at all events, I was under the necessity of keeping to the east, to make the strait of le Maire, and all the way I should advance in that point of the compass, while running down the parallel of Isle Grande, would bring me nearer the coast of Patagonia, where it was necessary I should get soundings before I could double Cape Horn. I thought also that the latitude of Isle Grande not being fully determined, it was more probable that I should fall in with it by working to windward, between the latitudes of 44° and 45° , than if I followed a straight line in $40^{\circ} 30'$, as I might have done by running from west to east, the westerly winds being as constant in these latitudes as the easterly winds are between the tropics.

The reader will soon see that I derived no benefit from my calculations; and that, after a fruitless search of forty days, during which I encountered five gales of wind, I was obliged to proceed on my voyage, in order to accomplish the remaining objects of my mission.

On the 7th of December I was in the supposed parallel of Isle Grande, in 1785.
 44° 38' south latitude, and 34° west longitude according to lunar obser- December.
 vations made the preceding day. Sea-weed passed the ship, and for several 7.
 days we had been surrounded by birds; but they were of the albatross and
 petrel species, which never approach the land except in the breeding
 season.

These slight indications of land, however, kept our hopes alive and
 afforded us some consolation for the dreadfully tempestuous seas in which
 we were navigating; but when I reflected, that I had still a westerly run of
 35° before I could reach the strait of le Maire, where it was of impor-
 tance I should arrive before the end of January, my mind was by no means
 free from uneasiness.

I continued plying on different tacks, between the latitudes of 44° and
 45°, till the 24th of December, and having traversed 15° of longitude in 24.
 that parallel, at length, on the 27th, gave up the pursuit under a full
 conviction that the Isle Grande of la Roche did not exist*, and that sea-
 weeds and petrels do not prove the vicinity of land, since birds and marine
 plants were observed by us all the way till we reached the coast of Pata-
 gonia. The chart will show better than these details the course we
 steered, the ship's place on each day being regularly laid down in it; and
 I am convinced that future navigators, who may sail in quest of this
 island, will have no better success than myself. If they make the at-
 tempt, however, it ought only to be when sailing east towards the Indian
 seas, as in that case, it will be no more tedious or difficult to run down
 thirty degrees in that parallel than in any other; and if no land be found,
 they will at least have approached so much nearer to the term of their

* If Isle Grande of la Roche had been laid down on charts in a less conjectural manner, la Pé-
 rouse, after running down the parallel assigned to it, might have asserted that it did not exist; but
 as its position has been determined only in a very uncertain manner from the journals of Anthony de
 la Roche and Americus Vespucius, the search made for it by la Pérouse proves only that it does not
 exist in the position assigned to it: which is all I shall add to the discussion on this subject contained
 in the nineteenth geographical note, inserted in an early part of the present volume. (French Editor.)

1785. voyage. For my own part I am fully persuaded that Isle Grande, like
 December. Pepys Isle, is a mere chimera*. The account, indeed, of la Roche himself, who pretends to have seen lofty trees upon it, is altogether improbable. It is certain that in 45° nothing but shrubs will be found in an island situate in the middle of the Southern ocean, for even the islands of Tristan d'Acunha, lying in a latitude far more favourable to vegetation, do not produce a single tree.

25. On the 25th of December the wind settled in the south-west, and continued for several days together in the same quarter. I was obliged to steer west-north-west, and to leave the parallel I had been constantly following for twenty days. As I had then passed the position assigned to Isle Grande in all charts, and the season was considerably advanced, I resolved to pursue the course that would give me most westing, from the fear of being reduced to the necessity of doubling Cape Horn in the bad season. The weather, however, proved more favourable than I could have expected. The gales ceased with the month of December, and the month of January was almost as fine as in general that of July is on the coasts of Europe. The only winds we had were from the north-west and south-west, varying alternately from one to the other; but we could crowd all our sails, and the variations were so fully indicated by the appearance of the sky that we were certain of the moment of change; which enabled us to be always prepared to stand upon the most advantageous tack. When the horizon grew misty, and clouds began to obscure the heavens, the wind veered from south-west to west; two hours after, it was sure to be in the north-west; and when the weather cleared and the fogs dispersed, it was as certain that it would soon return to its old points again, to the south-west and west. During sixty-six days' navigation, I do

* I am aware that New Georgia, marked in la Roche's journal, has been found a second time; but I doubt notwithstanding whether the honour of the discovery ought to be ascribed to this navigator. According to his journal, there is a channel between Bird's Island and Georgia ten leagues wide; now the channel in reality is only one league wide. This is a mistake of too gross a nature for a seaman of the least experience, if speaking of one and the same place, to make. It is, however, from the former land that we must reckon in order to lay down *Isle Grande* between the longitude of 43° and 44°. All the meridians from 35 to 50° were crossed by our vessels without discovering it.

not believe that it blew from the eastward for more than about eighteen hours. 1786.
January.

Having for several days calm weather and a smooth sea, the officers of both ships went on shooting parties in the boat, and killed a considerable number of birds, with which we were almost always surrounded. As these water excursions were in general successful, they procured us a considerable supply of fresh provisions, and oftener than once a sufficiency to enable us to make a general distribution to the whole ships' company. The sailors preferred this allowance to salt provisions; and I have no doubt that it contributed to preserve them in a good state of health.

We killed indeed albatrosses only of the large and small species, with four varieties of the petrel; but, when skinned, and dressed with a rich sauce, these birds were nearly as good as the wild ducks eaten in Europe. They have been described so accurately by the naturalists who accompanied captain Cook, that I think it only necessary to give a drawing of them, to convince ornithologists that we met with the same species as those of which Banks, Solander and Forster have given so complete accounts.

At length, on the 14th of January, we had soundings on the coast of Patagonia, according to our last lunar observations in $47^{\circ} 50'$ south latitude, and $64^{\circ} 37'$ west longitude. We had never neglected an opportunity, when the weather was favourable, of making such observations; and the officers of the ship were so expert in them, and assisted Mr Dagelet so admirably, that, in my opinion, our greatest error in longitude cannot be estimated at more than half a degree. 14.

On the 21st we had sight of Cape Fair-Weather, or of the northern point of Gallegos river on the coast of Patagonia. We were about three leagues from the land in forty-one fathoms of water, over a bottom of fine gravel, or small argillaceous stones of the size of peas. Our longitude by 21.

1786. observation at noon, being compared with the chart in Cook's second January. voyage, differed only by 15', which we were farther east.

22. We ran along the coast at the distance of five leagues, and on the 22d at noon set the Cape of the Virgins, bearing west, four leagues distant. This land is low and is almost destitute of verdure. The view given of it by the editor of Anson's Voyage appeared to be very correct, and its position on the chart in Cook's second voyage accurately determined.

As far as the Cape of the Virgins, the lead brought up regularly either mud, or those small pebbles mixed with mud, which are generally found in the directions of the mouths of rivers; but at Tierra del Fuego we had almost always a rocky bottom, with only twenty-four or thirty fathoms of water, though we were at the distance of three leagues from the land, which induces me to believe that this coast is not so safe as that of Patagonia.

The latitudes and longitudes of the different capes of this island are determined with the utmost precision in Cook's chart.

The direction of the coast between these capes has been laid down from bearings taken with precision, but it has not been possible to attend with sufficient care to those minute details on which the safety of navigation so much depends. Cook and other navigators can answer only for the routes they have themselves pursued or the soundings they have taken; and it is possible when the sea was calm they may have passed close to rocks or shoals upon which there were no breakers. This navigation, therefore, requires more caution than that of the coasts of Europe.

My view in entering into these details is to show the degree of confidence that may be placed in charts of this kind, the most perfect no doubt that were ever constructed, while traversing rapidly an immense space. In former times, before lunar observations were employed by navigators, it was impossible to attain to the same correctness. It is indeed so great,

that I rely as firmly on the points we have examined being laid down 1786.
within twenty miles of the truth, as I do on the exact position, as to lon- January.
gitude, of the observatories of Greenwich and Paris.

At two in the afternoon of the 25th, I took bearings a league to the 25.
south of Cape San Diego, which forms the western point of the strait of
le Maire. Since the morning, I had stretched along the coast at that di-
stance, and had followed, upon Cook's chart, the bay where Mr. Banks
went on shore in search of plants, while the Resolution waited for him
under sail.

The weather was so extremely favourable for the continuance of our
voyage, that it was impossible for me to grant the same indulgence to our
naturalists. At three o'clock I entered the strait, having doubled, at the
distance of three quarters of a league, Point San Diego, where there are
breakers, which do not extend, I believe, more than a mile; but having
observed others much farther in the offing, I steered a south-east course to
avoid them. I now perceived, however, that they were occasioned by
the currents, and that the reefs of San Diego were at a considerable
distance.

As it blew a fresh breeze from the north, I was able to approach Tierra
del Fuego with perfect ease, and I stretched along the shore within the
distance of less than half a league. The wind was so fair, and the
season so advanced, that I instantly determined to abandon my project of
touching at the Bay of Good Success, and to continue my course, without
losing a moment, in order to double Cape Horn. I considered, that it
would be impossible to supply all my wants there without losing, as I had
been obliged to do at St. Catherine's, ten or twelve days, because in those
open bays, where the sea breaks with fury on the beach, half the day is
lost, from the boats not being able to approach the shore. If to this
inconvenience a southerly wind had been added, which must have de-
tained me in the harbour as long as it continued, the favourable season
would have elapsed, and I should have exposed my ship to damage,

1786. and my crew to hardships highly prejudicial to the success of the ex-
January. pedition.

These considerations induced me to steer for the island of Juan Fernandez, which lay in my route, and where I was sure of finding both wood and water, with refreshments far superior to the penguins of the strait. At this time I had not a single person sick; I had still eighty casks of water, and Tierra del Fuego had been so often visited and described, that I could not hope to add any thing of importance to the ample accounts already given of it.

During our passage through the strait of le Maire the savages, according to custom, kindled large fires to induce us to anchor. There was one on the northern point of the Bay of Good Success, and another on the northern point of Valentine's Bay. I am persuaded, with captain Cook, that ships may anchor in either of these bays, where wood and water may both be procured, though game no doubt is less abundant there than at Christmas harbour, because during a great part of the year it is the residence of the savages.

In the strait, at the distance of half a league from Tierra del Fuego, we were surrounded by whales. It was obvious that they had never been molested, for they took no alarm at our ships, but swam majestically along within pistol-shot; and will no doubt remain sovereigns of these seas till the fishermen shall go to make war upon them as at Spitzbergen or Greenland. I doubt whether the whole aqueous part of the globe furnishes a better place for the whale-fishery. The ships might be moored in excellent bays, and might procure with ease water, wood, antiscorbutic herbs and sea-fowl, while their boats, within the short distance of a league, might kill as many whales as would constitute a complete cargo. The only inconvenience would be the length of the voyage, which would require nearly five months for each run; and these latitudes, I am afraid, can only be frequented in the months of December, January, and February.

We had no opportunity of making any observation on the currents of the

strait, which we entered at three in the afternoon, the moon being twenty-four days old. We were drifted to the southward with great rapidity till five, when the tide turned; but as we had a fresh breeze from the north we stemmed it without difficulty.

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The horizon was so hazy in the eastern quarter, that we could not descry Staaten Land, from which, however, we must have been less than five leagues distant, five leagues being the whole width of the strait. We kept so close to Tierra del Fuego, that, by the help of our glasses, we could perceive the savages kindling large fires, which is their only method of expressing to ships within sight a desire of their coming to anchor.

I had another motive, still more powerful, for relinquishing my intention of touching at the Bay of Good Success; for I had long been devising a new plan for the continuation of my voyage, which could not be decided till I had doubled Cape Horn.

This plan was to repair to the north-west coast of America during the present year. I was fully convinced, that, if I had not received orders to do so, it was merely from the fear that I should not be able to accomplish so long a run before winter; for the plan in reality was attended with numerous advantages. One of these advantages was the taking a new track, and crossing parallels in which it was possible to meet with undiscovered islands; and another the exploring more expeditiously all the places mentioned in my instructions, by employing two years in the northern hemisphere and two in the southern. As I was left at full liberty to execute the king's orders in whatever way might appear to me most likely to insure the success of my voyage, I only deferred the adoption of my project till I should know with certainty the period of my arrival in the South-sea.

I doubled Cape Horn with much greater ease than I had expected; and am convinced that this navigation is in no respect different from that of all high latitudes. The supposed difficulties are the effect of an ancient pre-

1786. judice, which will in time be laid aside, and which the account of Anson's February. Voyage has hitherto tended to keep alive in the minds of seamen.

9. On the 9th of February I was abreast of the strait of Magellan in the South-sea, pursuing my course towards the island of Juan Fernandez. According to my reckoning, I had passed the pretended land of Drake; but I lost very little time in searching for it, from the persuasion that it did not exist. Since my departure from Europe, my attention had been wholly directed to the tracks of ancient navigators; but their narratives are so badly written, that it is continually necessary to guess at their meaning; and geographers who are not seamen are, in general, so ignorant of hydrography, that they have been able to throw no light upon journals which stand in need of every illustration. They have accordingly laid down islands which do not exist, or which, like so many phantoms, on the approach of modern navigators, instantly vanish.

In 1578, admiral Drake, five days after he had cleared the strait of Magellan, was assailed in the Great Western Ocean by strong gales of wind, which continued to blow for nearly a month. It would be difficult to follow him in all his different courses; but at length he descried an island in the latitude of 57° south. Putting in here, he saw abundance of birds; and running afterwards to the north, for the space of twenty leagues, he fell in with other islands inhabited by savages, furnished with canoes. These islands produced wood and antiscorbutic plants. How is it possible, in reading this account, not to recognise in one of these places *Tierra del Fuego*, at which Drake must certainly have touched? And in all probability the other was the island of *Diego-Ramirez*, situate almost in the latitude of the pretended Island of Drake. At that period *Tierra del Fuego* was not known. *Le Maire* and *Schouten* did not discover the straits, bearing their name, till the year 1616; and, prepossessed with the idea that in the southern, as well as the northern hemisphere, there was land extending almost to the pole, they imagined that the southern part of America was intersected by channels, and that they had found another strait, like that of Magellan. These mistaken notions were calculated to

lead Drake into error, especially as he was driven by currents 12 or 15 degrees to the eastward of his reckoning; a circumstance which has since happened to many other navigators in the same seas. This probability becomes a certainty, when we reflect, that one of the ships of this squadron, which steered a northern while the admiral was pursuing a southern course, returned into the same strait of Magellan from which she had just before sailed: a convincing proof that she had made very little westing, and that admiral Drake had not gone farther than the longitude of America. It may be said also, that it is contrary to all probability that an island, remote from the continent, and in the latitude of 57° , should be covered with trees, while a single shrub is not to be found upon Falkland's Islands which are only in 53° ; that there are no inhabitants upon these islands, not even on Staten Land, which is only separated from the continent by a channel five leagues wide; and lastly the description which Drake gives of the savages, canoes, trees and plants, agrees so well with the Pecherees, and in general with the accounts we have of Tierra del Fuego, that I am astonished Drake's island is still suffered to exist on our charts.

The west-south-west winds being favourable to my intention of proceeding northward, I was determined not to lose my time, which was extremely valuable, in this fruitless research, and accordingly I continued my course towards the Island of Juan Fernandez. But having examined the quantity of provisions on board, I found that we had very little flour and bread remaining, because I had been obliged, as also had M^r de Langle, to leave a hundred casks at Brest for want of room to stow them away. The worms, beside, had got into the biscuit, and, though they had not rendered it unfit for use, had diminished our stock by about one fifth. These considerations induced me to prefer Conception to Juan Fernandez. I knew that this part of Chili abounded in corn, which might be procured there at a cheaper rate than in many parts of Europe, and that I should find all other provisions in great plenty and at a moderate price. Accordingly I altered my course a little to the east.

On the evening of the 22d I had sight of the island of Mocha, which

1786. lies about fifty miles south of Concepcion. From the fear of being driven
February. to the north by the currents, I kept close in with the land; but I now think it a useless precaution, and that it is sufficient to get into the latitude of the island of Santa Maria, which it will be necessary to explore, taking care not to approach nearer than about three leagues, as there are sunken rocks which extend from it's north-west point to a considerable distance.

Having doubled that point, a vessel may range freely along the land, all the dangers being then above water and at a small distance from the shore. At the same time the paps of Biobio appear in view. They are two mountains of small elevation, the form of which is indicated by their name. It is necessary to steer a little to the north of the paps, towards Talcaguana point, which forms the western entrance of the Bay of Concepcion. This bay is about three leagues wide from east to west, and about the same extent in depth from north to south; but the entrance is confined by the island of Quiquirina, situate in the middle, and forming two channels, of which the eastern is the safest, and the only one in use. It is about a league wide; whereas the western channel, between the island of Quiquirina and Talcaguana point, is hardly more than a quarter of a league, is full of rocks, and ought not to be entered but with a good pilot.

From the island of Santa Maria to the entrance of the Bay of Concepcion bottom is found upon the coast. At the distance of three leagues we had seventy fathoms of water, over a bottom of black mud, and when we were shut in with the bay east and west, thirty fathoms. From the north point of the island of Quiquirina the water continues shoaling to seven fathoms, till within two musket-shots from the land. There is excellent anchorage in every part of the bay; but ships are sheltered from the north winds only when lying abreast of the village of Talcaguana.

At two in the afternoon we had doubled the point of the island of Quiquirina; but the south winds, which had hitherto proved so favourable to us, being now contrary, we were obliged to make continual tacks, taking care to keep the lead going. We endeavoured with our glasses to discover

the city of Concepcion, which, from Frezier's plan, we ought to have found in the south-eastern quarter at the bottom of the bay; but we saw no signs of it. At five in the evening pilots came on board, who informed us, that the city had been destroyed by an earthquake in 1751 and no longer existed; and that a new one had been built, at the distance of three leagues from the sea, on the banks of the river Biobio. We learned also from these pilots, that we were expected at Concepcion; and that letters from the Spanish ministry had arrived thither before us. We continued to ply to windward in order to reach the bottom of the bay, and at nine in the evening we anchored in nine fathoms water, about a league to the north-east of the anchorage of Talcaguana, which we intended to occupy the next day. About ten, Mr Postigo, captain of a frigate in the Spanish service, paid me a visit by order of the governor of Concepcion. He slept on board, and returned at day-break to give an account of his mission. Before he left us, he pointed out to our pilot the most convenient place for us to anchor in, and, previously to his mounting his horse, sent on board a quantity of fresh provision, fruits and vegetables, more than sufficient for the whole crew, whose excellent state of health seemed to surprize him. No vessel had ever before doubled Cape Horn and arrived at Chili without having some sick on board; whereas in neither of our ships was there a single individual the least indisposed.

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At seven in the morning we got under way with all our boats towing us a-head, and at eleven, of the 24th of February, anchored in the creek of Talcaguana in seven fathoms water, over a bottom of black clay; the middle of the village of Talcaguana bearing from us south 21° west, Fort St Augustin, south, and Fort Galvez, near our watering place, north-west 3° west.

24.

From the time of our arrival on the coast of Chili, we had taken lunar observations every day, and our longitudes differed but little from those assigned to it by Don George Juan; but as we have reason to believe the present method much superior to that employed in 1744, I shall place the north point of the island of Santa-Maria in $37^{\circ} 1'$ south latitude, and $75^{\circ} 55'$

1786. 45" west longitude; and the middle of the village of Talcaguana in latitude 36° 42' 21", and longitude 75° 20', according to the observations made February. by M^r Dagelet in our astronomical tents, erected close to the sea-side. The plan traced out by Don George Juan is so correct, that our observations have served only to confirm it's accuracy; but M^r Bernizet, our geographer, added to it a part of the course of the river Biobio, in order to point out the spot where the new city is built, and the road that conducts to it. (*Charts and Plates, N^o 4.*)

CHAPTER III.

Description of Conception—Manners and Customs of the Inhabitants—Departure from Talcaguana—Arrival at Easter Island.

THE bay of Conception is one of the most commodious harbours in the world. The water is smooth, and there are scarcely any currents, though the tide rises six feet three inches. It is high water here at the full and change of the moon, at 45 minutes after one. The bay is secure from all winds but the north, which in these climates prevail only during the winter, that is to say from the end of May to October. This is the period also of the rainy season, and the weather is continually wet, while the monsoon lasts, a name that may be given with propriety to those steady gales, which are succeeded by southerly winds that blow all the rest of the year, and are accompanied with the most delightful weather. The only anchorage sheltered from the north-east wind during the winter is off the village of Talcaguana on the south-east side, where the Spaniards now have their only settlement in the bay; the old city of Conception, as I have already observed, having been destroyed by an earthquake in 1751. It was built at the mouth of the river St Peter to the eastward of Talcaguana, and its ruins are still to be seen. They will not, however, exist as long as those of Palmyra, as the buildings of this country are constructed either of mud, or of bricks dried in the sun. The roofs are covered with tiles similar to those used in many of the southern provinces of France.

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After the destruction of this city, which was rather swallowed up by the sea than overturned by an earthquake, the inhabitants dispersed and encamped on the neighbouring heights. It was not till 1763, that they made choice of a new situation, a quarter of a league from the river Biobio, and three leagues from the former town and the village of Talca-

1786. guana. The bishop's palace, the cathedral, and all the religious houses,
February. were transferred to the new city ; which is of great extent, because the houses are built only one story high, in order that they may be more secure from the violence of earthquakes which happen there almost every year.

The new city contains about ten thousand inhabitants. It is the residence of the bishop and of the major-general, who is commander in chief. This bishopric borders, on the north, upon that of San Jago, the capital of Chili, where the governor-general resides. It is bounded on the east by the Cordilleras, and extends as far southward as to the strait of Magellan ; but its true limit is the river Biobio, which is a quarter of a league from the city. The whole country on the south of that river belongs to the Indians, the island of Chiloe and a small district round Baldivia excepted. These people cannot with propriety be called the subjects of the king of Spain, with whom they are almost always in a state of war ; and the functions of the Spanish governor are, therefore, of the utmost importance. He has at his disposal both the regular troops and the militia, which gives him great authority over all the citizens, who in civil matters are governed by a corregidor. He is entrusted beside with the sole defence of the country, and obliged to fight and to negotiate incessantly. A new administration is about to succeed the old one. It will be very little different from that of our colonies, as the authority will be divided between the governor and the intendant. But it must be observed, that there is no supreme council in the Spanish colonies, those who are invested with the king's authority acting as judges in civil causes, with a few civilians to assist them. It may be readily perceived that, as justice is not administered by judges of equal dignity, their opinions must be almost always influenced by that of the president. Hence it happens that justice, in reality, is administered here by one person ; which must give rise to enormous abuses, unless we suppose that person divested both of prejudice and passion, and possessed of a most enlightened mind.

In no country of the world is the soil more fertile than in this part of

Chili. Corn yields sixty fold, and the vines are equally productive. The plains are covered with innumerable flocks and herds which multiply beyond conception, though left entirely to themselves. All the proprietors have to do is to raise fences round their possessions, and to leave the oxen, horses, mules, and sheep within these inclosures. The usual price of a fat ox is about eight dollars; that of a sheep three quarters of a dollar; but there are no purchasers, and, on this account, the inhabitants are accustomed every year to kill a great number of oxen, the hides and tallow of which are alone preserved and sent to Lima. Some beef also is salted and dried in the Indian manner for the use of the small coasting vessels in the South sea.

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There is no particular disease which is endemial in this country; but there is one, which I dare not name, that is very common. Those who are so fortunate as to escape it's ravages, attain to a great age. At Conception there are several persons who have completed a century.

This colony, notwithstanding these numerous advantages, is far from making the progress which, from a situation so favourable to an increase of population, might be expected; but the influence of the climate is continually counteracted by that of the government; and prohibitory regulations exist in Chili from one end of the country to the other. Though the productions of this kingdom, if increased to their full extent, would be sufficient to maintain half Europe; though its wool would supply all the manufactories of France and England; and its cattle, were the flesh to be salted, produce an immense revenue—it is entirely destitute of commerce. Four or five small vessels only arrive annually from Lima, with sugar, tobacco, and a few of the manufactured articles of Europe, which the unfortunate inhabitants can procure only from the second or third hand, and after immense duties have been paid for them, first at Cadiz, next at Lima, and lastly on their entering Chili. All they have to give in exchange is wheat, which is so cheap that the planter finds no encouragement to cultivate his waste lands; or tallow, hides, and a few planks, so that the balance of trade is always against Chili, which, with it's small modicum of

1786. gold* and trifling articles of barter, is unable to pay for the sugar, tea, February. tobacco, stuffs, linen, cambric, and the different articles of hardware, which are brought thither, and which are necessary for the common wants of life.

It is evident from this short statement, that if Spain do not change it's system; if freedom of trade be not authorised; if the various duties on foreign commodities be not lessened; if the government do not remember, that a very small duty with an immense consumption is more productive than excessive imposts which destroy that consumption, the kingdom of Chili will never attain to the prosperity that might be expected from it's happy situation.

This country has the misfortune to produce a small quantity of gold. As the rivers are almost all auriferous, a native, by washing the earth, can earn, it is said, half a dollar a day; but, as provisions are in great plenty, he is excited to labour by no real want. Deprived of communication with foreigners, and unacquainted with our luxury and our arts, his desire can be fixed upon no object with sufficient energy to overcome his indolence. The ground therefore remains uncultivated; and the only activity to be found among the natives is displayed by those who devote a few hours to the washing of the sand of the rivers, which frees them from the necessity of learning a trade. Hence it happens, that the houses even of the most opulent are wretchedly furnished, and that all the workmen at Conception are foreigners.

The dress of the women consists of a plaited petticoat, made of the old fashioned gold and silver stuffs formerly manufactured at Lyons. These petticoats, which are reserved for important occasions, may be entailed in families like diamonds, and descend from the great-grandmother to the daughters of the third or fourth generation. Such dresses,

* In some notes which have been remitted me, the gold collected annually in the bishoprick of Conception, is estimated at 200,000 dollars. There are single plantations in St. Domingo which produce as large a revenue.

however, can only be procured by a small number of females, while the rest have scarcely sufficient clothing to cover their nakedness.

1786.
February.

Indolence has contributed still more than credulity or superstition to people this country with nuns and monks, the last of whom enjoy a greater degree of liberty than those of any other country; and from the misfortune of having nothing to do, the want of family attachments, their state of celibacy without being separated from the world, and their living in the convenient retirement of their cells, they are the worst subjects in America. Their effrontery is inexpressible. I have seen them stay at a ball till midnight, remote indeed from the better company, and mixed with the servants. No one gave more accurate information to the younger part of my fellow-travellers than these monks, respecting places of which priests ought to have had no knowledge, but for the purpose of putting others upon their guard.

The natives of Conception are considerably addicted to theft, and the women extremely civil and complying. They are a degenerate race, with the mixture of the Indian: but the inhabitants of the higher rank, the true Spaniards, are uncommonly polite and attentive. The many proofs I received of their hospitality would render me deficient in gratitude, if I did not paint them in this respect in the amiable colours which their character so justly merits, and which I shall endeavour to do while recording our own transactions and adventures.

I was scarcely at anchor before the village of Talcaguana, when a dragoon brought me a letter from Mr. Quexada, the temporary governor, in which he informed me that we should be received in the same manner as if we were the countrymen of the Spaniards; and he added, with the utmost politeness, that the orders which had been transmitted to him upon the subject were agreeable to the sentiments of his own heart, and to the hearts indeed of all the inhabitants of the town. With the letter, refreshments of every kind were sent on board from different persons, and in such abun-

1786. dance, that we were neither able to consume, nor could well tell where to
February. stow them.

Being obliged to attend in the first place to the refitting of my vessel, and to the conveying on shore our astronomical clocks and quadrants, I could not repair immediately to thank the governor for his extreme civility, though I was impatient to discharge this duty, and intended to embrace the earliest opportunity: but he was beforehand with me, and came on board, attended by the principal officers of the colony. Next day I returned this visit, accompanied by M^r de Langle and several of the officers and scientific men from both vessels. We were preceded by a detachment of dragoons, the commanding officer having stationed half a troop at Talcaguana. From the time of our arrival both the men and their horses had been constantly at our service. M^r Quexada, M^r. Sabatero commandant of the artillery, and the major of the place, came to meet us at the distance of about a league from Concepcion. We alighted at the house of M^r Sabatero, where an excellent dinner was provided; and in the evening a splendid ball was given, to which the principal ladies of the place were invited.

The dress of these ladies, extremely different from what we had been accustomed to see, has been drawn by M^r Duché de Vancy (*Charts and Plates N° 5*). It consists of a plaited petticoat, which leaves half the leg visible, and which is tied considerably below the waist; stockings striped red, blue, and white; and shoes so short that the toes are bent under the ball of the foot, so as to make it appear nearly round. Their hair is without powder, and is divided into small braids behind, hanging over the shoulders. Their boddice is generally of gold or silver stuff, over which there are two short cloaks, that underneath of muslin, and the other of wool of different colours, blue, yellow, and pink. The upper one is drawn over the head, when they are in the streets and the weather is cold; but within doors it is usual to place it on their knees; and there is a game played with the muslin cloak, by continually shifting it about, in which the ladies of Concepcion display considerable grace. They are for

the most part handsome, and of so polite and pleasing manners, that there is certainly no maritime town in Europe where strangers are received with so much attention and kindness. 1786.
February,

The ball ended about midnight, and as the houses of the temporary governor and Mr Sabatero were not sufficiently large to accommodate all the French officers and gentlemen belonging to the expedition who were present, the inhabitants had pressed us to accept beds, and we were thus quartered in different parts of the town.

We had paid our respects to the principal families before dinner, as well as to the bishop, an intelligent man, agreeable in conversation, and of a charity of which the Spanish episcopacy exhibits frequent examples. He was a native of Peru, had never been in Europe, and was indebted for his elevation solely to his merit. He mentioned the regret which major-general Higgins would feel at being detained on the frontiers by the Indians during our short stay in his government. The favourable accounts which we heard of this officer from every quarter, and the general esteem in which he was held, made me lament the circumstances that deprived us of the pleasure of his company. A courier had been dispatched to him, and his answer, which arrived before we left Concepcion, announced his speedy return. He had just concluded an advantageous peace, which was highly necessary to the people of his government, as their distant habitations were exposed to the fury of the savage tribes, who massacre the men and children indiscriminately, and carry away the women as prisoners.

The Indians of Chili are no longer those ancient Americans who were formerly struck with terror by our instruments of war. The increase of horses, which are now dispersed through all the interior parts of the immense deserts of America, and of oxen and sheep, which has been also very considerable, have rendered these people real Arabs, similar, in every respect, to those who inhabit the deserts of that name. Continually on horseback, journeys of two hundred leagues are to them only short ex-

1786. February. cursions. They travel, accompanied by their flocks and their herds; feed on their flesh, their milk, and even their blood*; and clothe themselves with their skins, of which they make helmets, cuirasses, and bucklers. Thus the introduction of two domestic animals into America has had the most striking influence upon the manners of all the tribes that inhabit from St. Jago to the strait of Magellan. They no longer follow any of their ancient customs; they no longer live upon the same fruits, or wear the same garments; and they have a much more considerable resemblance to the Tartars, or the borderers upon the Red Sea, than to their ancestors of two centuries past.

It will readily be perceived how formidable such a people must be to the Spaniards. For how is it possible to follow them in such long excursions? or how prevent assemblages, which bring together in one point tribes scattered over an extent of four hundred leagues, and who thus increase into armies of thirty thousand men?

Mr Higgins has been fortunate enough to gain the good will of these savages, and has thereby rendered the most essential service to the nation which has adopted him; for he was born in Ireland, and is descended from one of those families, who were persecuted on account of their religion, and their ancient attachment to the house of Stuart. I cannot deny myself the pleasure of making known to my countrymen this worthy officer, whose manners are so perfectly adapted to every nation. Like the Indians, I conceived an attachment to him in the course of an hour's conversation. He had returned to Conception almost immediately upon the dispatch of his letter; and I was scarcely informed of it when he arrived at Talcaguana. My visit was thus anticipated again. But a major-general of cavalry is sooner on horseback than a French naval officer, and Mr Higgins beside, on whom the country depended for its safety, was a man of such extraordinary activity, that it was difficult to equal him.

* I have been assured, that they sometimes bleed their oxen and horses, and drink the blood.

His attention to us exceeded, if possible, that of M^r Quexada; and there was so much sincerity in his behaviour, in his offers of service, and declarations of regard for the French, that no words are sufficiently strong to express the grateful sense we entertained of his kindness. As we were under obligations to all the inhabitants, we resolved to give a general entertainment before our departure, to which all the ladies of Conception should be invited. For this purpose a large tent was erected on the seashore, where we dined a hundred and fifty persons of both sexes, who were so obliging as to come no less than three miles to see us. This repast was followed by a ball, a small display of fire-works, and the ascent of a paper-balloon, sufficiently large to exhibit an agreeable spectacle.

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February.

Next day, we made use of the same tent to give a general treat to the crews of the two frigates upon this occasion. We all ate at the same table, M^r de Langle and myself being placed at the head, and each officer to the lowest sailor seated according to the rank which he held on board. Our dishes were wooden bowls; but cheerfulness was displayed on every countenance, and the crews appeared in better health, and a thousand times happier than when they left Brest.

The major-general being desirous, in his turn, of giving an entertainment, we all repaired to Conception, the officers on duty excepted. Mr. Higgins came to meet us, and conducted our cavalcade to his house, where a table of a hundred covers was laid, to which all the inhabitants of distinction, the officers, and several ladies were invited. Between the courses a Franciscan *improvisatore* recited some Spanish verses to celebrate the union that prevailed between the two nations. At night there was a ball, which was graced by the presence of all the ladies dressed in their gayest attire; and an interesting ballet was performed by officers in masks. A more agreeable entertainment could not be furnished in any part of the world. It was given by a man adored in the country, and to foreigners of a nation which had the reputation of being the most accomplished in Europe.

1786. But these diversions and this hospitable reception had not the effect of
 March. banishing from my thoughts my principal object. I had given notice on the day of our arrival, that I should sail on the 15th of March, and that if our vessels should be refitted, and our provisions, wood and water put on board earlier than that period, every one should be at liberty to go and amuse himself on shore. Nothing could be better calculated to produce dispatch than this promise, of which however I dreaded the consequence as much as the sailors desired it; because wine is very common at Chili, because every house at Talcaguana is a tavern, and because the women of the lower classes are almost as complaisant as those of Otaheite. No irregularities, however, took place; nor did the surgeon inform me of any bad effects having arisen from this indulgence.

During our stay at Talcaguana M^r Dagelet made a regular series of comparisons to ascertain the rate of going of our time-keepers, with which we were perfectly satisfied. Since the period of our departure from France, the one marked N^o 19 was found to have lost only $3\frac{1}{2}$ " per day on the mean motion of the sun, which differs only half a second from its daily rate at Brest, and one second when compared with that at which it went at Tene-riffe. The small time-keepers, N^o 25 and N^o 29, had varied so considerably as no longer to deserve our confidence.

15. At day-break, on the 15th, I made the signal to prepare for sailing; but the wind had unfortunately settled in the north. Since we first entered the road it had been constantly between south-south-west and south-west. The breeze generally sprang up at ten in the morning, and ceased blowing at the same hour in the evening: if it had begun at an earlier hour, it gradually died away earlier; and if later, it died away later: if it had begun at noon, for instance, it lasted till midnight: so that there was about twelve hours of wind and a calm of the same duration. This rule invariably took place till the 15th, when the wind, after a perfect calm and excessive heat, settled in the north. From this quarter it blew a fresh gale attended with a great deal of rain, during the night between the 15th and 16th; but on the
 17. 17th, about noon, we had a light breeze from the south-west with which I

got under way. It was so faint, that it carried us only two leagues out of the bay, where we remained completely becalmed in a very heavy swell of the sea, occasioned by the late northerly gales. During the whole night we were surrounded by whales, which approached so close to the ships that they spouted water on board from their breathing holes. It is a fact, worthy of remark for its singularity, that no inhabitant of Chili has ever harpooned any of these animals. Nature has conferred on the country so many valuable gifts, that several centuries in all probability will elapse before that branch of industry will be at all cultivated.

1786.
March.

On the 19th, a southerly wind having enabled me to clear the land, I directed my course to the eastward of the island of Juan Fernandez, which however I did not make, its position having been so accurately determined by the observations of father Feuillée while at Conception, that it is impossible there should be an error of so much as 10' in longitude.

19.

On the 23d, I was in $3^{\circ} 29'$ of south latitude and $85^{\circ} 51'$ of west longitude, according to our time-keeper N° 19, the going of which, since our departure from Conception only, was so perfectly equal to that of N° 18, on board M^r de Langle's ship, that there was not a difference of two minutes of a degree in their results, till we arrived at Easter island. In the cold climate of Cape Horn it was otherwise. It appears that the table of temperature delivered to M^r Dagelet at Paris, by M^r Berthoud, was not correct, and the difference was so great as to occasion in N° 18, between the strait of le Maire and the coast of Chili, an error in longitude of more than a degree.

23.

On the 24th, the wind settled at east, and did not vary 5° till we had arrived within about a hundred and twenty leagues of Easter Island.

24.

On the 3d of April; being in latitude $27^{\circ} 5'$ south and longitude 101° west, it veered continually from north-east to north-west. Several birds were now seen, the first we had met with since we passed the island of Juan Fernandez, a sea swallow or two seen for a few minutes, in a run

April.
3.

1786. of six hundred leagues, not being worthy of notice. There is no sign of
April. land so infallible as this variety of winds; yet natural philosophers will find it difficult perhaps to explain, in what manner the influence of a small island, in the midst of an immense ocean, can thus extend itself over a hundred leagues. At the same time it is not sufficient for a navigator to presume that he is at that distance from an island, if nothing indicates the point of the compass in which he may expect to fall in with it. The direction of the flight of birds after sun-set never gave me the slightest information, and I am fully convinced that all their movements through the air are determined by the allurements of their prey. At the fall of night I have seen sea-fowl direct their flight towards ten different points of the horizon, and I should suppose the most enthusiastic augurs would hardly have ventured from their flight to have drawn any conclusion.

4. On the 4th of April, when at the distance of no more than sixty leagues from Easter island, I saw no birds, and the wind was at the north-north-west. It is probable, if I had not known, with certainty, the position of the island, I should have imagined that I had passed it, and should have gone a different course. These reflexions were made on the spot; and I cannot help confessing that the discovery of islands is the result of chance only, and that often inferences and deductions the most sagacious in appearance have no tendency but to mislead the navigator.

8. On the 8th of April, at two in the afternoon, I had sight of Easter island, at the distance of twelve leagues, bearing west 5° south. The sea was high with the wind at north, which had not been steady for four days, but had shifted continually by the west from north to south. The proximity of a small island was not in my opinion the only cause of this inconstancy; and I conceive it probable that in the latitude of 27° the trade wind is not regular at this period of the year. The part which I saw of the island was the eastern point. I was precisely in the place where Davis, in 1686, fell in with an island of sand, and observed, twelve leagues farther, land to the west, which captain Cook and Mr Dalrymple have supposed to be Easter Island, found again in 1722 by Roggewein. But these two navigators,

though men of enlightened minds, have not sufficiently considered what Wafer relates upon the subject; who says (in page 300 of the Rouen edition) "That captain Davis having taken his departure from the Gallapagos, with the intention of returning to Europe by Cape Horn, and of touching only at Juan Fernandez, felt, in the latitude of 12° south, a terrible shock, which led him to suppose that he had struck upon a rock. He had kept constantly on a southern course, and according to his reckoning was at the distance of a hundred and fifty leagues from the American continent. He afterwards learned, that, precisely at the same time, there had been an earthquake at Lima. Having recovered from his alarm, he continued to run south, south by east and south-east, till he reached the latitude of $27^{\circ} 20'$, and he relates, that at two in the morning the people stationed on the forecastle heard the sea breaking on a beach. He lay to till day-light, when he perceived a small island of sand, but no rock near it, which he approached within a quarter of a mile, and then saw, about twelve leagues farther west, a considerable tract of land, which, from the intervals between the capes, he conceived to be a cluster of islands. Davis continued his course towards Juan Fernandez without examining it; but Wafer says, that this small island of sand is situated at the distance of five hundred leagues from Copiapo, and of six hundred from the Gallapagos." The impossibility of this result has never been sufficiently attended to. If Davis, being in 12° south latitude, and a hundred and fifty leagues from the coast of America, made good a south-south-east course, as Wafer affirms, since it is evident that this captain of freebooters must have steered with an easterly wind, which blows very frequently in those latitudes, in order to accomplish his design of proceeding to Juan Fernandez, we may conclude with M^r Pingré that there is a mistake of a figure in Dampier's quotation, and that Davis's land is only two hundred leagues instead of five hundred from Copiapo. It would then be probable, that Davis's two islands are those of S^t Ambrosio and S^t Felix, a little to the north of Copiapo; but the pilots of the buccaneers were not so nice in their observations, and never obtained a latitude short of $30'$ or $40'$. I would have spared my readers this short geographical discussion, if I had not the opinion to combat of two so justly celebrated navigators. I must

1786.
April.

1786. however remark, that Cook himself was in doubt, and that he says he would
 April. have decided the question if he had had time to proceed to the eastward of
 Easter island. As I have run down three hundred leagues in that parallel,
 and did not discover the island of sand, in my opinion no doubt ought any
 longer to be entertained upon the subject, and I conceive the problem to
 be fairly resolved*.

* In adopting the solution of la Pérouse, I think it necessary to enter more at large into the proofs
 derived from the journals of the different navigators.

It appears certain, as Pingré, Cook, and la Pérouse remark, that there is a mistake of a figure in
 Dampier, and that the supposed land of Davis can be only two hundred leagues from the American
 coast.

I agree with our navigator, that the observations of longitude taken in Davis's time were so erro-
 neous, that the latitudes only can be depended upon. It is accordingly from Wafer's narrative that
 Davis's route, subsequent to his departure from the Gallapagos, must be traced. Davis, after leaving
 the Gallapago islands, stretched southward as far as latitude 12° , where he felt a terrible shock, &c.
 He had constantly steered a south course, and was then a hundred and fifty leagues from the conti-
 nent of America.

By marking this first point on the chart it will appear, that he was in 87° west longitude, or nearly
 so.

He continued his course south, south by east and south-east as far as the land which he discovered
 in latitude $27^{\circ} 20'$.

It appears then from Davis's route, thus traced, that he must really have been about two hun-
 dred leagues from Copiapo and six hundred from the Gallapagos, or one degree to the south-east of
 the southern point of the position assigned in the French charts to the islands of St Felix and St Am-
 brose: and accordingly, the large tract of land which Davis perceived twelve leagues to the westward
 must have been these islands.

They are placed by the English charts in 15° of south latitude.

By the French in 25° .

By those of Green, between $26^{\circ} 20'$ and 27° .

Cook acknowledges that he missed the true latitude of these islands, by trusting to the tables of
 latitudes and longitudes in Robertson's Elements of Navigation, rather than to Green's chart. He
 saw certain signs of land in the vicinity of 25° south latitude.

Cook, when in $25^{\circ} 50'$ and $25^{\circ} 30'$, could neither see Davis's land, which does not exist, nor the
 islands of St Felix and St Ambrose, which must be situate in about 27° , and of which he observed
 some indications.

La Pérouse, in coming from the east, and running down three hundred leagues in the parallel of

During the night between the 8th and 9th of April, I stretched along the coast of Easter island at the distance of three leagues. The weather was clear, and in less than three hours the wind had veered to every point from the north to the south-east. At day-break I steered for Cook's Bay, which of all those in the island is the most sheltered from the easterly winds. It is open to the west only, and the weather was so fine that I was in hopes the wind would not blow from that quarter for several days. At eleven o'clock I was not more than a league distant from the anchorage. The Astrolabe had already let go her anchor; and I dropped mine very near her; but the bottom shelved so suddenly that neither of them held, and we were obliged to heave them up and to tack twice in order to regain the anchorage.

1786.
April.

This circumstance did not damp the ardour of the Indians, who swam after us to the distance of a league in the offing, and came on board with a smiling countenance and an air of security, which gave me the most favourable impression of their character. Men more suspicious, when they saw us again under sail, would have feared the being carried away from their native country. But the idea of so perfidious an act appeared not to have entered their minds. They were in the midst of us naked, and without

Easter Island, could see neither Davis's land, nor the islands of St Felix and St Ambrose, the longitude of which is from 26° to 27° to the eastward of that island.

It is evident then, as Captain Cook and Dalrymple thought, that Easter island, found again by Roggewein in 1722, cannot be Davis's land.

It is evident, that the islands of St Felix and St Ambrose cannot exist in the position assigned them in the English charts; for, as Cook remarks, Davis must have fallen in with them in his way.

It is evident, that the islands of St Felix and St Ambrose cannot exist in the position assigned them in the French charts, a position corresponding with that laid down by Robertson, since they must then have been found by Cook.

And thus it appears demonstrated, that Davis's land does not exist; but that islands exist in the 27° of south latitude, at about two hundred leagues from Copiapo; that these islands are no other than those of St Felix and St Ambrose erroneously laid down in all the charts, and are the supposed land of Davis. Such at least is the opinion I have formed after comparing the journals of the different navigators. It is that also of a much esteemed navigator of modern times; I mean Bougainville.—
(French Editor.)

1786. arms, having a small cord only tied round their loins to keep in it's place a
April. bundle of grass intended to cover what it is usual with all nations to conceal.

Mr. Hodges, the painter, who accompanied Cook in his second voyage, has not given of the physiognomy of these Indians a just delineation. It is generally agreeable, but exhibits considerable variety, and has none of the characteristic traits observable in the Malays, the Chinese, and the natives of Chili.

I made them several presents, and found that they preferred small remnants of printed cotton, about half a yard long, to nails, knives, and beads; but they were still fonder of hats. I had too small a quantity, however, to gratify the taste of more than a few. At eight in the evening I dismissed my new guests, giving them to understand, by signs, that I should come on shore at break of day. They entered their boat dancing for joy, and when at the distance of about two musket-shots from the shore, on which the surf broke with great violence, threw themselves into the sea; but they had taken the precaution of tying up my presents in small bundles, which each placed on his head to preserve them dry.

CHAPTER IV.

Description of Easter Island—Occurrences there—Manners and Customs of the Inhabitants.

COOK's Bay in Easter Island (*Charts and Plates*, N^o 10), lies in 27° 11' south latitude, and 111° 55' 30" west longitude. It is the only anchoring-place which is sheltered from the east and south-east winds, which usually blow in these latitudes. With a westerly gale it would be a situation of great danger, but the winds never blow from this quarter till after having passed from the east to the north-east, the north, and successively to the west. There is therefore time to get under way and make sail, and it is sufficient to stand off shore about a quarter of a league to be out of all danger. This bay is easily distinguished. After having doubled the two rocks off the southern point of the island, the shore must be kept at the distance of a mile. A small sandy bay soon appears in sight, and is the most distinguishing and certain mark. When this bears east by south, and the two rocks are shut in by the point, you may come to anchor in twenty fathoms sandy bottom, at a quarter of a league from the shore. At a greater distance soundings are not to be found in less than thirty-five or forty fathoms, and the depth increases so rapidly that the anchor will not hold. At the foot of one of the statues of which I shall shortly speak, the landing is perfectly good.

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April.

At day-break I made preparation for our going on shore. I had reason to expect friends, because I had loaded all who came on board with presents; but I was too well acquainted with the narratives of different voyagers not to be aware, that these Indians are only children of a larger growth, in whom the sight of our different moveables excites such strong desires that they would use every effort to get possession of them. I therefore thought it

1786. necessary to restrain them by fear, and gave orders that a small military
April. accompaniment should form part of our landing. It consisted of four boats with twelve armed soldiers. M^r de Langle and myself were followed by all the passengers and officers, except those required for the necessary service on board the two frigates; so that, including our boat's crew, we amounted to about seventy persons.

Four or five hundred Indians waited for us on shore. They were without arms; some of them covered with white or yellow cloths; but the greater number naked. Several were tatooed, and had their faces painted red: their cries and physiognomy were expressive of joy, and they advanced to offer us their hands and assist us in landing.

The island, in this part, is elevated about twenty feet above the sea; the mountains inland are about seven or eight hundred toises distant, and from their feet the land slopes by a gradual descent to the sea. This space abounds with a kind of herbage which I should suppose proper for feeding cattle. It covers large stones lying on the surface, which appeared to me to be exactly the same as those of the Isle of France, called in that country *giraumons* (pumpkins), because most of them are of the size of that fruit. These stones, which we found very troublesome in walking, are a real benefit to the soil, because they preserve the coolness and humidity of the earth, and in part supply the salutary shade of the trees, which the inhabitants have had the imprudence to cut down, no doubt at some very distant period. This has exposed their soil to the burning ardor of the sun, and has deprived them of ravins, brooks, and springs. They were ignorant that in these small islands, in the midst of an immense ocean, the coolness of the earth covered with trees can alone detain and condense the clouds, and by that means keep up an almost continual rain upon the mountains, which descends in springs and brooks to the different quarters. The islands which are deprived of this advantage, are reduced to the most dreadful aridity, which, gradually destroying the plants and shrubs, renders them almost uninhabitable. M^r de Langle as well as myself had no doubt that this people were indebted to the imprudence of their ancestors for their present

unfortunate situation; and it is probable that the other islands of the South sea are supplied with streams merely because they happily possess inaccessible mountains, on which it has been impossible to cut down the wood; so that nature in these last islands has been more liberal under the appearance of greater restraints of her gifts, by reserving certain portions of the surface to which the islanders have been unable to reach. A long residence on the Isle of France, which so strikingly resembles Easter Island, has convinced me that trees never spring up again unless defended from the sea breezes by other trees, or by a walled inclosure; and it is this knowledge which has pointed out to me the cause of the devastation of Easter Island. The inhabitants have less reason to complain of the eruptions of their volcanoes, which have long since been extinguished, than of their own imprudent exertions. But as man, of all living creatures, the most readily habituates himself to his local situation, this people appeared to me less unfortunate than they did to captain Cook and M^r Forster. These navigators arrived at Easter Island after a long and painful voyage, in want of every necessary, and afflicted with the sea scurvy. They found neither water, nor wood, nor swine. A few fowls, bananas, and potatoes, afford very inadequate supplies to men under such circumstances. Their narratives were influenced by their situation. Ours was infinitely better. Our people were in perfect health. We had supplied ourselves at Chili with every necessary for several months, and we had no other wish, as to this people, than to confer benefits upon them. We brought them goats, sheep, and hogs, together with the seeds of the orange and lemon trees, the cotton plant, maize, and generally all the vegetable species capable of thriving upon their island.

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April.

Our first care after landing was to form an inclosure by ranging our armed men in a circle; and, having directed the natives to leave this space empty, we pitched a tent in it. I had landed the presents I intended to make, as well as the different animals; but as I had expressly forbidden my men to fire, or even to keep at a distance by blows of their muskets such of the Indians as might be troublesome, the soldiers themselves very speedily became objects of the rapacity of these islanders, who soon became

1786. very numerous. We were surrounded by at least eight hundred, among
April. whom there were certainly a hundred and fifty women. The faces of many of these females were agreeable, and they offered their favours to every one who would make them a present. The Indians solicited us to accept their offers, and some among them gave us an exhibition of the pleasures they were capable of affording. The agents in these transactions were no otherwise concealed than by a simple covering of cloth, the manufacture of the country. While our attention was attracted to these tricks of the women, our hats were taken from our heads, and our handkerchiefs stolen out of our pockets. The whole multitude appeared to be accomplices in these thefts; for upon the commission of each individual act, they all fled like a flock of birds when suddenly alarmed. Perceiving, however, that we had no disposition to make use of our muskets, they returned in a few minutes, renewed their caresses, with a sharp look out for the opportunity of committing a new theft. This succession of manœuvres continued the whole morning. As we were to leave the island in the evening, and our short stay would consequently not allow us to attend to their education, we determined to divert ourselves with the stratagems and tricks they were continually putting in practice to rob us; and to remove every disposition to resentment on the part of my people, which might have been followed by unpleasant consequences, I declared that I would make good the losses they might sustain on this occasion. The Indians were without arms, except that three or four out of this great number had each a wooden club of no formidable magnitude. Some among them appeared to exercise a small degree of authority over the others. I supposed these to be chiefs, and I distributed among them medals, which I hung to their necks with a chain; but I soon perceived that their pre-eminence consisted in nothing but their superiority of talents, and greater dexterity in promoting the pillage; and though they pretended to defend us, and actually ran after those who stole our handkerchiefs, it was very easy to perceive that they had not the least intention of overtaking the delinquents.

As we had only eight or ten hours to remain on the island, and were not

willing to lose any time, I committed the care of the tent and our effects to M^r d'Escures, my first lieutenant, to whom I also gave the command of all the soldiers and sailors who were on shore. We afterwards divided ourselves into two bodies; the first, under the orders of M^r de Langle, was directed to penetrate as far as possible into the island, to sow grain in all such places as appeared proper for that purpose, to examine the soil, plants, culture, population, and monuments of this island, and generally every other thing which might appear interesting among this very extraordinary people. Those who thought themselves capable of walking over a great extent of ground were of his party. He was accompanied by M^{esses} Dagelet, Lamanon, Duché, Dufresne, de la Martinière, father Receveur, the abbé Mongès, and the gardener. The second party, of which I was one, contented itself with visiting the monuments, platforms, houses, and plantations, at the distance of a league round our tent. The drawings of these monuments by M^r Hodges give but a very imperfect notion of what we saw. M. Forster thinks them the work of a people much more considerable than at present exists on the island, but his opinion does not appear to me to be well founded. The largest of the rude busts which are upon these platforms, was not found by actual measurement to be more than fourteen feet six inches in height, seven feet six inches broad at the shoulders, three feet thick at the belly, six feet broad and five thick at the base; and these busts might well be the work of the present generation, which I think I may estimate without exaggeration at two thousand persons. The number of women appeared nearly equal to that of the men; the children in the same proportion as in other countries; and though, out of about twelve hundred inhabitants collected in the neighbourhood of the bay, on account of our arrival, there were certainly not more than three hundred females, I could deduce no other inference than that the islanders from remoter situations had come to see our vessels, while their women, either more delicate or busied with their household concerns and families, had remained in their houses, so that we saw only those who lived near the bay. The account of M^r de Langle confirms this opinion, who saw in the interior part of the island a great many women and children. We all entered into those caverns in which M. Forster and some officers of

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1786. captain Cook had first supposed the women might have been concealed.
April. They are subterraneous dwelling-places, of the same form as others which I shall describe hereafter, and in which we found small faggots, the largest not exceeding five feet in length, and six inches in diameter. That the inhabitants however concealed their women, when captain Cook visited them in 1772, there can be no doubt; but it is impossible for me to ascertain the cause. It is probable, that to his generous conduct with regard to this people we were indebted for the confidence they showed us, which enabled us to judge more accurately of the state of their population.

All the monuments which at present exist, and of which M^r Duché has given a very exact drawing, (*Charts and Plates*, N^o 11.) appeared to be very ancient. They are placed in morais, or burying-places, as may be judged from the great quantity of bones which we found near them. The form of their present government has no doubt rendered their condition so equal, that no chief at present exists of sufficient consideration for a number of men to employ themselves in erecting a statue to preserve his memory. Instead of these colossal monuments, they have substituted small pyramidal heaps of stones, the top stone of which is white-washed with lime. These monuments, which may be constructed in the course of an hour by a single man, are abundant on the sea-shore; and an Indian, by lying along upon the ground, made us clearly understand that they covered a grave; and afterwards, by raising his hands towards the sky, he appeared evidently desirous of expressing to us that he believed in another life. I was cautious at first of admitting this opinion, and I must confess that I thought them very far from entertaining such a sentiment; but, having seen them repeat this sign to many other persons, and M^r de Langle, who travelled into the interior parts of the island, having reported the same fact, I had no further doubt respecting it, and I believe that all our officers and passengers were of the same opinion. We did not however observe any traces of religion; for I cannot imagine that any person could take these statues for idols, though the Indians showed a kind of veneration for them. These colossal busts, of which I have before given the dimensions, and which prove the small progress this people have made in the art of

sculpture, are formed of the volcanic production known by naturalists under the name of *lapillo*. It is so easily crumbled and so extremely light that some of captain Cook's officers supposed it to be artificial, and composed of a kind of mortar which hardened in the air. It only remains to explain how so considerable a weight should have been raised without any point of support. But as we are certain that it is a very light volcanic stone, it would be easy, with levers five or six toises long, and a stone placed underneath as the fulcrum, to raise a still more considerable weight. A hundred men would be sufficient for this operation, and the space does not allow room for more. Thus the wonder disappears; we restore to nature its stone of *lapillo*, which is not factitious, and there is reason to believe, that, if there are no other more modern monuments in the island, it is because all conditions are equal; because a man finds little temptation to become king of a people almost naked, and who live upon potatoes and yams; and because, as these Indians cannot make war from the want of neighbours, they have no need of a chief.

I can offer nothing but conjectures respecting the manners of this people, of whose language I knew nothing, and whom I only saw for a single day. But, possessed of the experience of former navigators, I was perfectly acquainted with their situation, to which I could apply my own reflections.

Scarcely a tenth part of the island is cultivated, and I am persuaded that three days' labour of each Indian is sufficient to procure subsistence for a year. This facility of supplying the wants of life induced me to think, that the productions of the earth were in common; and the more so, as I am almost certain that the houses are common, at least to a whole village or district. I measured one of these houses near our tent*. It was three hundred and ten feet long, ten feet wide, and ten feet high in the middle. Its form was that of a canoe reversed. Its only entrance was by two doors, two feet high, through which it was necessary

* As it was not yet finished, captain Cook could not have seen it.

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1786. to crawl on all fours. This house is large enough to contain upwards of
April. two hundred persons. It is not the dwelling of a chief, for it is without furniture, and so great a space would be useless to him. It forms a village by itself, with the addition of two or three other small houses at a little distance.

There is probably a chief in each district, who looks more particularly after the plantations. Captain Cook imagined that this chief was the proprietor; but, if this celebrated navigator found any difficulty in procuring a considerable quantity of potatoes and yams, it must be attributed less to the want of these vegetables, than to the necessity of obtaining almost a general consent for selling them.

With regard to the women, I dare not venture to affirm, that they are common to a whole district, and the children to the republic: but it is certain, that no Indian appeared to possess the authority of a husband over any of the women; and if it be true, that they are the property of the men, it must be confessed that it is a property of which they are very prodigal.

Some of the habitations are subterraneous, as I have already remarked, but others are formed of rushes, which proves that there are marshy places in the island. These rushes are very skilfully arranged, and are a perfect defence against the rain. The edifice rests on a low wall of cut stone* eighteen inches thick, in which holes are made at equal distances to receive the poles, which form the framing and are bended over into an arch. Mats of rush fill up the space between these poles.

It cannot be doubted, as captain Cook observes, that these people have had the same origin with those of the other islands of the South sea. Their colour, features, and language are the same, and their clothes are likewise fabricated out of the bark of the mulberry; but they are very scarce, because the want of humidity has destroyed these trees. The few which

* These are not free-stone, but solid lava.

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remain, are only three feet high, and it is even necessary to surround them with a wall to defend them from the winds. It is observable that these trees never grow higher than the walls by which they are sheltered. I have no doubt that in former times these islanders must have possessed the same productions as those of the Society Isles. Their fruit-trees must have perished by the drought, as well as the dogs and swine, to whom water is absolutely necessary. But man, who in Hudson's strait drinks the oil of the whale, becomes accustomed to every thing; and I have seen the natives of Easter Island drink sea-water, like the albatros of Cape Horn. It was the rainy season, and a small quantity of brackish water was found in cavities near the shore. They offered it to us in calabashes, but it disgusted the most thirsty. I do not flatter myself, that the hogs I gave them will multiply; but I hope that the goats and sheep, which drink but little, and are fond of salt, will thrive in the island.

At one in the afternoon I returned to the tent, with the intention of going on board, in order that Mr Clonard, my second, might come on shore in his turn. Arrived there, I found almost every one without either hat or handkerchief. Our forbearance had encouraged the pilferers, and I had shared myself no better than the rest. An Indian who assisted me to descend from a platform, after rendering me this service, took away my hat and fled with the utmost speed, followed as usual by all the others. I did not suffer him to be pursued, not being desirous of the exclusive privilege of defence from the sun, as we were almost all without hats. I continued to examine this platform, which is the monument most expressive of the ancient talents of this people for building; for the pompous title of architecture cannot be applied here with any propriety. They appear never to have had the least knowledge of any cement, but they cut and fashion the stones in perfection, and have placed them according to the regular rules for joining masses of this material.

I collected specimens of these stones, and found them to consist of lavas of different density. The lightest, which must consequently be the soonest decomposed, forms the upper soil of the interior of the island.

1786. That which is nearer the sea is constructed of a lava infinitely more compact; and I do not know of any instrument or substance in the possession of these islanders sufficiently hard to cut these last stones: a longer residence in the island might perhaps have afforded some explanation of this subject.
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At two in the evening I returned on board, and M^r de Clonard went on shore. Soon afterwards two officers of the *Astrolabe* came to inform me, that the Indians had committed a new theft, which had occasioned a quarrel rather of a serious nature. Certain divers had cut the hawser of the *Astrolabe*'s boat under water, and carried off her grapnel. This was not perceived till the thieves had advanced to some distance inland. As the grapnel was an article we could not dispense with, two officers and several soldiers pursued them; but they were assailed by a shower of stones. A musket loaded with powder and fired in the air had no effect, so that they were obliged at length to discharge a single piece with small shot, some grains of which no doubt struck one of the Indians; for they refrained from throwing stones, and our officers returned unmolested to the tent: but it was impossible to overtake the thieves, who must have been astonished at not having been able before to weary our patience.

They soon however returned and surrounded our residence, where they repeated the offer of their women, and we were as good friends as at first. At six in the evening every thing was re-embarked, the boats returned on board, and I made the signal for weighing. Before we set sail M^r de Langle gave me an account of his journey into the interior of the island, which I shall relate in the next chapter. He had sown various seeds during his excursion, and had shown marks of the most extreme kindness to the natives. I must observe, however, as the finishing stroke to their portrait, that a kind of chief, to whom M^r de Langle made a present of a he and a she goat, received them with one hand, and robbed him of his handkerchief with the other.

It is certain that these people have not the same notions of theft as we

have. It is probable that they attach no ideas of shame to this action; though they very well know that it is an act of injustice, since they take flight on the instant of committing it, to avoid the punishment which they no doubt fear, and which we should not have failed to have inflicted in proportion to the offence, if we had intended to have made any stay upon the island: for our extreme lenity must otherwise have produced the most serious mischief.

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No person who reads the narratives of modern navigators can imagine the Indians of the South sea to be in a savage state. On the contrary, they must have made very great progress in civilisation, and I believe them to be as corrupt as the circumstances in which they are placed will allow them to be. My opinion in this respect is not founded on the various thefts they committed, but on the manner in which they effected them. The most daring rascals of Europe are less hypocritical than the natives of these islands. All their caresses were false. Their physiognomy does not express a single sentiment of truth. The object most to be suspected is he who has just received a present, or who appears to be the most earnest in rendering a thousand little services.

They committed an act of violence on two young girls of about thirteen or fourteen years of age, by bringing them near us, in hopes of receiving a reward. The repugnance of these young Indians was a proof that the law of the country was violated in their persons. None of our people availed themselves of the barbarous right thus attempted to be conveyed to them; and if certain moments were devoted to nature, the desire and consent were mutual, and the women made the first offers.

I found in this country all the arts of the Society Islands, but with much less power of exercising them, for want of the raw materials. Their canoes are also of the same form, but they are composed of very narrow planks, four or five feet long, and at most will carry only four men. I saw but three of these boats in this part of the island, and should be little surprised if, for want of wood, they were soon to be reduced to none.

1786. But they have learned to do without them. For they swim so well, that
April. they will leave the shore to the distance of two leagues in the roughest sea; and by preference, for the sake of pleasure, land on their return at the place where the surf beats the strongest.

The coast seemed to me to afford few fish, and I believe that most of their articles of food are of the vegetable kind. They live on potatoes, yams, bananas, sugar-cane, and a small fruit which grows on the rocks on the sea-coast, resembling the grapes which are found near the tropic in the Atlantic ocean. A few fowls, which are very scarce upon this island, cannot be considered as any resource. Our party in their excursion saw no land bird, and even those of the sea are not very common.

The ground is cultivated with great skill. The natives collect the grass and other vegetables, which they heap together and burn for the sake of the ashes, as a manure. The banana trees are planted in lines. They likewise cultivate the solanum or night-shade, but I am ignorant to what use they apply it. If I knew them to possess vessels capable of resisting fire, I should conclude that, as is done in Madagascar and the Isle of France, they dress and eat it in the same way as spinach; but they have no other means of cooking their victuals than the one practised at the Society Islands, by digging a hole in the earth and covering their potatoes or yams with ignited stones or coals mixed with earth; so that all their food may be said to be baked, as in an oven.

The care they took to measure our vessel convinced me, that they had not contemplated our arts with stupidity. They examined our cables, our anchors, our compass, and our steering wheel; and in the evening they returned with a string to take their measure over again; which showed that they had had some discussions upon the subject on shore, and that doubts had remained in their mind. I esteemed them the less from their appearing to be capable of reflection; and I left them one subject to reflect upon, which will probably escape their notice; namely, that we made no use of our power against them, which they did not mis-

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understand, for the mere motion of a musket levelled in sport put them to flight. On the contrary we have landed in their island merely to do them service. We have loaded them with presents. The feeble and the weak, particularly children at the breast, were the marked objects of our caresses. We have sown in their fields every kind of useful grain. We have left hogs, goats and sheep in their habitations, which will probably multiply; in exchange for all which we demanded nothing. Nevertheless they threw stones at us, and robbed us of every thing which it was possible for them to carry off. I must again remark, that it would have been imprudent in other circumstances to have behaved with so much mildness; but I was determined to depart in the night, and flattered myself that at day-break, when they no longer saw our vessels, they would attribute our speedy departure to the just discontent we must entertain at their proceedings, and that this reflection would render them better. However chimerical this notion may be, it is of very little consequence to navigators, as the island itself offers scarcely any supply to vessels, and is beside at a small distance only from the Society Islands *.

* Easter Island, discovered in 1722, by Roggewein, appears, as la Pérouse observes, to have undergone a revolution in it's population and the productions of it's soil: at least it is probable from the difference in the narratives of these two navigators. The reader who may wish to make the comparison may consult the Voyage of Roggewein, printed at the Hague in 1739, or the Abridgement, by the President de Brosses, in his work entitled *Histoire des Navigations aux Terres Australes*, Vol. II. p. 226, and following. (French Editor.)

CHAPTER V.

Excursion of M^r de Langle into the interior Parts of Easter Island.—New Observations on the Manners and Arts of the Natives, the Quality and Culture of their Soil, &c.

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“ I SET off at eight in the morning, accompanied by M^{esses} Dagelet, de Lamanon, Dufresne, Duché, the abbé Mongès, father Receveur, and the gardener. We first proceeded inland to the eastward, over hills covered with volcanic stones, which rendered our walk very laborious; but I soon perceived that there were paths of easy communication between house and house, of which we took the advantage, and visited several plantations of yams and potatoes. The soil of these plantations was a very fat vegetable earth, which the gardener judged proper for the culture of our seeds. He sowed cabbage, carrots, beet, maize, and pompions; and we endeavoured to make the natives comprehend, that these grains would produce fruits and roots proper for food. They understood us perfectly, and in consequence showed us the best grounds, and the places where they were desirous of seeing our new productions. To the leguminous plants we added the orange, the lemon, and the cotton trees, explaining to them that these were trees, and that what we had sown before were plants.

“ We found no other shrub but the paper-mulberry * and the mimosa, but there were fields of considerable extent of night-shade, which these people appeared to me to cultivate in grounds exhausted by yams and po-

* *Morus papyrifera*, abundant in Japan, where the bark is made into paper. This very ligneous bark serves the women of Louisiana for different works made of the silk which is derived from it. The leaf affords excellent nourishment for the silk-worm. This tree is at present cultivated in France. (French Editor.)

tatoes. We continued our journey towards the mountains, which, though considerably elevated, all terminate in an easy slope, and are covered with grass. We perceived no trace of any ravine or stream. After having proceeded about two leagues to the east, we returned by the south-east coast, along which we had sailed the day before in our ships, and upon which, by the help of our telescopes, we had perceived a great number of monuments. Of these some were fallen down, the natives taking no care to repair them, and others standing, with their platforms half gone to decay. The largest of those which I measured was sixteen feet high, including the capital, which was three feet and an inch, and consisted of a very light porous lava. Its breadth at the shoulders was six feet seven inches, and its thickness at the base two feet seven inches.

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“ Having afterwards observed some habitations collected together, I directed my course towards this kind of village, of which one of the houses was three hundred and thirty feet long, and of the form of a canoe reversed. Close by this dwelling we observed the foundations of several others, no longer in existence; they are composed of the stones of lava, cut into form, in which there are holes about two inches in diameter. This part of the island appeared to be better cultivated and more populous than the vicinity of Cook's Bay. The monuments and platforms were also more numerous. Upon different stones which composed these platforms, we observed the rude outlines of skeletons, and certain openings closed with stones, which we imagined might communicate with caves containing the bodies of the dead. An Indian explained to us, by very expressive signs, that this was a place in which they were deposited, and that they afterwards ascended to heaven. We found on the sea-shore some pyramids of stones, piled nearly in the same manner as cannon-balls in a park of artillery, and some human bones in the neighbourhood of the pyramids and statues, of which the backs of the latter were all turned towards the sea. In the course of the morning we visited seven different platforms, on which were statues, erect or reversed, and differing from each other only in their size, and the greater or less decay they had undergone from the duration of their exposure. Near one of the latter we found a kind

1786. of mannequin of rushes, which exhibited a human statue six feet in height,
April. covered with a white cloth of the fabric of the country; the head of the natural size, the body thin, and the legs in a tolerably exact proportion. To the neck hung a net or basket, covered with white cloth, and which appeared to be filled with grass. By the side of this bag was the figure of a child two feet in length, with the arms crossed, and the legs pendent. This mannequin could not have existed for a great number of years, and it was, perhaps, a model of the statues erected at present to the chiefs of the country. Close by this platform two parapets were seen, which formed an inclosure of three hundred and eighty-eight feet in length, and three hundred and twenty-four in breadth. We could not determine whether it was a reservoir for water, or the commencement of a fortress; but the work appeared never to have been finished.

“ Continuing our excursion to the west, we met about twenty children, who were walking under the care of some women, and appeared to direct their course towards the houses I have already mentioned.

“ At the extremity of the southern point of the island we saw the crater of an ancient volcano, of which the magnitude, the depth, and the regularity, excited our admiration. It has the shape of a truncated cone; its superior or largest base appeared to be more than two-thirds of a league in circumference; and the extent of the inferior base may be estimated, by supposing that the side of the cone forms an angle of about 30° with the perpendicular. This inferior base is a perfect circle; the bottom is marshy, and contains several large pools of fresh water, the surface of which appeared to be above the level of the sea. The depth of this crater is at least eight hundred feet.

“ Father Receveur, who descended to the bottom, informed us, that the marsh is surrounded with the finest plantations of bananas and mulberry trees. It appears, as we observed while sailing along the coast, that a considerable subsidence towards the sea has taken place, which has occasioned a great breach in the crater. The height of this breach is one-

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third of the entire cone, and its width one-tenth of the upper circumference. The vegetation which has taken place on the sides of the cone, the marsh at the bottom, and the fecundity of the neighbouring grounds prove, that the subterraneous fires have long been extinguished*. At the bottom of the crater we observed the only birds we had seen on the island, which were tern. The approach of night obliged me to return to the ships. Near one of the houses we saw a great number of children, who fled at our approach. It seemed probable to us, that this was the residence of all the children of the district. Their age differed too little for them to have belonged to two women, who appeared to have the charge of them. Near this house was a hole made in the earth for cooking yams and potatoes, according to the method practised in the Society Islands.

“ On my return to the tent I gave to three different natives the three kinds of animals which we had appropriated for them; and I made choice of such as appeared to me most likely to breed.

“ These islanders are hospitable. They several times presented us with potatoes and sugar-canes; but they never suffered an opportunity to escape in which they could rob us with impunity. Scarcely the tenth part of the island is cultivated. The cleared grounds have the form of a regular long square, but without any kind of enclosure. The rest of the island, to the very summit of the mountains, is covered with a very coarse grass. It was the wet season, and we found the earth moistened to the depth of a foot. Some cavities in the hills contained a small quantity of fresh water, but we no where observed any running stream. The earth appeared to be of a good quality, and would exhibit stronger vegetation if it were watered. We did not see any instrument in the hands of the people with which they could cultivate the ground. It is probable that, after clearing the land, they make holes with pickets of wood, and in this manner plant their potatoes and yams. Some bushes of mimosa are seen, though rarely, the strongest stems of which are not more than three inches in diameter.

* On the edge of the crater next the sea there is a statue almost entirely destroyed by time, which is a proof that the volcano has been extinguished for several centuries.

1786. The conjectures which may be formed respecting the government of these
April. islanders are, that they compose a single nation, divided into as many districts as there are morais ; because it is to be remarked, that the villages are built near these burying places. It appears that the productions of the earth are common to all the inhabitants of the same district ; and as the men offer their women to strangers without any delicacy, it may be supposed that they do not belong to any individual in particular, and that when the children are weaned, they are delivered to other women, who, in each district, take charge of their physical education.

“ The number of men we met was twice that of the women ; and if in reality the number of the latter be not the smallest, this circumstance must have arisen from their remaining more within doors. The whole population may be estimated at two thousand persons. Several houses which were building, and the number of children, afford reason to think that it is not diminishing, though it is probable that it may have been more considerable when the island was furnished with woods. If the natives possessed sufficient industry to construct reservoirs for water, they would by that means remedy one of the greatest misfortunes of their situation, and perhaps prolong their lives. We did not see a single man on the island who appeared older than sixty-five, if we may be allowed to form a judgment of the age of a people so little known, and whose manner of living differs so essentially from our own.”

CHAPTER VI.

Departure from Easter Island—Astronomical Observations—Arrival at the Sandwich Islands—Anchor in the Bay of Keriporepo in the Island of Mowee—Departure.

AFTER leaving Cook's Bay in Easter Island at ten in the evening, I stood to the northward, and coasted along the shore of that island at the distance of a league by moon-light. We did not lose sight of the land till the next day at two in the afternoon, at the distance of twenty leagues. The winds were constantly at south-east and east-south-east. The weather was extremely clear, and did not change till the wind came round to the east-north-east, where it continued from the 17th to the 20th, when we began to catch bonetas, which constantly followed our frigates as far as the Sandwich islands, and afforded us almost daily, for six weeks together, a complete supply for our people. This excellent food preserved them in the best state of health, and after ten months' navigation, during which we were no more than twenty-five days in port, we had not a single sick person on board either of the vessels. Our course lay through unknown seas, and was nearly parallel to that of captain Cook, in 1777, when he sailed from the Society Islands for the north-west coast of America; but we were about eight hundred leagues more to the east. I flattered myself, that in a traverse of near two hundred leagues we should make some discovery. Men were constantly at the mast head, and I had promised a reward to the first who should discover land. To overlook a greater space, our two frigates sailed abreast of each other during the day, with an interval of three or four leagues between them.

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In this, as in all the rest of our traverses, Mr Dagelet lost no opportunity of making observations of lunar distance. Their agreement with the time-

1786. keepers of M^r Berthoud was so exact, that the difference never exceeded ten or fifteen minutes of a degree; and they served to prove the accuracy of each other. M^r de Langle's calculations were equally satisfactory, and we knew every day the course of the currents, by the difference between the longitude by reckoning and that by observation. They carried us to the west as far as one degree of south latitude with a velocity of about three leagues in twenty-four hours, after which they carried us to the east with the same velocity as far as seven degrees north, where they resumed their course to the west; and, on our arrival at the Sandwich Islands, our longitude by account differed nearly 5° from that by observation; so that if, like the ancient navigators, we had possessed no method of ascertaining the longitude by observation, we should have placed the Sandwich Islands 5° more to the eastward. It is undoubtedly from this direction of the currents, formerly but little observed, that the errors in the Spanish charts have arisen. For it is remarkable, that most of the islands discovered by Quiros, Mendaña, and other navigators of that nation, have been re-discovered in the modern times, and have always been too near in their charts to the coast of America. I must also add, that if the vanity of our pilots had not been a little mortified at the difference which was daily found between the longitude by account and that by observation, it is very probable that we should have had error of eight or ten degrees in making the land, and consequently that in a less enlightened age we should have placed the Sandwich Islands ten degrees more to the eastward.

These reflections left me considerably in doubt respecting the existence of a cluster of islands called by the Spaniards *La Mesa*, *Los Majos*, and *La Desgraciada*. In the chart which admiral Anson took on board the Spanish galleon, and of which the editor of his voyage has given an engraving, this cluster is placed exactly in the latitude of the Sandwich Islands, but 16 or 17 degrees more to the eastward. My daily differences or errors of longitude induced me to think that these islands were absolutely the same*;

* In the course of the years 1786 and 1787, captain Dixon anchored three times at the Sandwich Islands, and having the same doubt as la Pérouse respecting the identity of these islands, and those called *Los Majos*, *La Mesa*, &c. he made researches in consequence. His conclusion was absolutely the same, as may be seen from the following extracts from his voyage.

but what completed my conviction was the name of *Mesa*, which signifies *Table*, given by the Spaniards to the island of *Owhyhee*. I had read in the description of this same island by captain King, that, after having doubled the eastern point, a mountain appears in sight called *Mowna-roa*, which is visible at a great distance. "It is flat," he says, "at the top, making what is called by mariners table-land*." The expression in the English, therefore, corresponds with that in the Spanish.

1786.
April.

Though the season was far advanced, and I had not a moment to lose, in order to reach the American coast, I determined to shape a course that should bring my opinion to the proof. The result, if I were in an error,

"The islands Los Majos, La Mesa, and St Maria la Gorta, laid down by Mr. Roberts, from 18° 30' to 28° north latitude, and from 135° to 149° west longitude†, and copied by him from a Spanish manuscript chart, were in vain looked for by us, and, to use Maurelle's words, "*it may be pronounced, that no such islands are to be found*; so that their intention has uniformly been to mislead rather than be of service to future navigators." Introduction, page xiv.

"Our observations at noon, on the 8th of May, gave 17° 4' north latitude, and 129° 57' west longitude. In this situation we looked for an island called by the Spaniards *Roco Partida*, but in vain; however, we stood to the northward under an easy sail, and kept a good look out, expecting soon to fall in with the group of islands already mentioned.

"From the 11th to the 14th we lay to every night, and when we made sail in the morning, spread at the distance of eight or ten miles, standing westerly: it being probable, that though the Spaniards might have been pretty correct in the latitude of these islands, yet they might easily be mistaken several degrees in their longitude: but our latitude on the 15th, at noon, being 20° 9' north, and 140° 1' west longitude, which is considerably to the westward of any island laid down by the Spaniards, we concluded, and with reason, that there must be a gross mistake in the chart." Voyage, page 49.

"On the 1st of November we looked out for St Maria la Gorta, which is laid down in Cook's chart in 27° 50' north latitude, and in 149° west longitude; and, the same afternoon, sailed directly over it. Indeed, we scarcely expected to meet with any such place, as it is copied by Mr. Roberts into the above chart from the same authority which we had already found to be erroneous, respecting Los Majos and Roco Partida." *Ibid.* page 85. (French Editor.)

* Cook's Third Voyage, Vol. III. p. 103.

† It is to be observed, that Dixon reckoned his longitude from the west, and Cook, in his third voyage, from the opposite quarter. Dixon's reason no doubt is, that, having shaped his course to the westward in doubling Cape Horn, this way of reckoning was more natural and more convenient to him.

1786. must necessarily have been, that I should discover a second cluster of
 April. islands, forgotten by the Spaniards for perhaps more than a century, and should determine their position and their exact distance from the Sandwich Islands. Those who know my character will not suspect, that in this research I could be guided by any wish to rob captain Cook of the honour of this discovery. Full of respect and admiration for the memory of this great man, he will ever be considered by me as the first of navigators, as the individual who has determined the exact situation of these islands, explored their coasts, ascertained the manners, usages, and religion of the inhabitants, and who has paid with his life for all the information we at present possess respecting them. This man, I say, is the true Christopher Columbus of these countries, of the coast of Alashka, and of almost all the islands of the South-sea. Chance has given the discovery of islands to the most ignorant; but the honour belongs only to great characters like him, to leave nothing to be regretted or desired respecting the countries they have explored. Seamen, philosophers, naturalists, find alike in his Voyages that information which their respective pursuits may lead them to demand. All men, perhaps, and most assuredly all navigators, owe the tribute of praise to his memory; and shall I be thought to withhold my portion at the moment of my arrival at the group of islands, where his career was so unfortunately terminated?

May. On the 7th of May, in 8° north latitude, we saw many birds of the pe-
 7. trel kind, with some man of war and tropic birds. These two last species are said to fly but a small distance from the land. We likewise saw a great many turtle pass by our ships. The Astrolabe caught two, which we shared, and which proved excellent. The birds and the turtle were in sight as far as 14°, and I have no doubt but that we passed near some island, probably uninhabited; for a rock in the middle of the sea would serve as the retreat of these animals rather than a cultivated country. We were then very near Rocca Partida and La Nublada. I directed my course so as to have passed almost in sight of the former, if it's longitude had been accurately determined; but I would not run into it's latitude, because I had not; from my other projects, a single day to spare for this research. It was pro-

able I might not meet with it, and I was little surprised at finding no signs of it's appearance. When I had passed it's latitude the birds disappeared, and, till my arrival at the Sandwich Islands, through a space of five hundred leagues, we never saw more than two or three in a day.

1786.
May.

On the 15th I was in $19^{\circ} 17'$ north latitude and 130° west longitude; that is to say, in the same latitude as the cluster of islands in the Spanish charts, as well as in that of the Sandwich Islands, though a hundred leagues more to the eastward than the former, and four hundred and sixty to the eastward of the latter. As I thought it would render an important service to geography if I could succeed in erasing from the charts those idle names, denoting islands which have no existence, and perpetuating errors extremely injurious to navigation, I wished, in order to remove every doubt, to continue my course as far as the Sandwich Islands. I even formed the project of passing between the islands of Owhyhee and Mowee, which the English were not so situated as to be able to explore; and I purposed to land at Mowee, to obtain some provisions, and then depart without losing an instant. I knew, that by following my plan only in part, and exploring no more than two hundred leagues on this parallel, there might still be unbelievers; and I was desirous that there should not remain against my conclusions the slightest objection.

15.

On the 18th of May I was in latitude 20° north and 139° longitude west, precisely upon the island Disgraciada of the Spaniards, but had no signs of land.

18.

On the 20th I had passed through the middle of the supposed cluster of los Majos, and had yet met with no indication of the vicinity of any island. I continued to run to the west, on the parallel between 20° and 21° , and at length, on the 28th in the morning, I was in sight of the mountains of Owhyhee, which were covered with snow, and soon afterwards saw those of Mowee, somewhat less elevated than the former. I made a press of sail to approach the land, but was still, when night closed in, at the

20.

28.

1786. distance of seven or eight leagues. I therefore stood off and on in expectation of day-break, to enter the channel between these two islands, and to seek an anchoring place to the leeward of Mowee near the island of Morokinne. Our longitude by observation agreed so perfectly with that of captain Cook, that, having traced our bearings upon the English charts, we found only 10' difference, which we were more to the eastward.

29. At nine in the morning the point of Mowee bore west 15° north, and a small island also appeared, bearing west 22° north, which the English could not see from any of their positions, and consequently it does not appear on their chart, which in this part is very defective; whereas every thing which they have laid down from their own observations deserves the highest encomium. The aspect of the island of Mowee was delightful. I coasted along its shore at the distance of a league. It projects into the channel in the direction of south-west by west. We beheld water falling in cascades from the mountains, and running in streams to the sea, after having watered the habitations of the natives, which are so numerous that a space of three or four leagues may be taken for a single village: but all the huts are on the sea-coast, and the mountains are so near, that the habitable part of the island appeared to be less than half a league in depth. To form a conception of what we felt, it is necessary to be a seaman, and to be reduced, as we were, in a burning climate to a single bottle of water a-day. The trees which crowned the mountains, and the verdure of the banana plants that surrounded the habitations, produced inexpressible charms to our senses; but the sea beat upon the coast with the utmost violence, and kept us in the situation of Tantalus, to desire and devour with our eyes what it was impossible for us to attain.

The breeze had freshened, and we were running at the rate of two leagues an hour, which encouraged me in an endeavour before night to explore this part of the island as far as Morokinne, near which I hoped to find an anchoring place sheltered from the trade winds. This plan, dictated by the imperious necessity of circumstances, did not permit me to

shorten sail, in order to wait for about a hundred and fifty canoes which put off from the shore with hogs and vegetables, which the Indians proposed to exchange with us for pieces of iron.

1786.
May.

Almost all these canoes boarded one or the other of the frigates; but our velocity was so great that they filled with water alongside, and the islanders were under the necessity of quitting the rope which we had thrown out to them, and swim away. They first hastened after their hogs, which they brought back in their arms, lifted them on their shoulders into their boats, out of which they emptied the water, and cheerfully entering them again, endeavoured by every exertion to recover the position they had lost near our frigates, and which had been instantly occupied by others that also met with the same accident. Of these canoes, forty at least were upset, and, though the commerce between us and these honest Indians was infinitely agreeable to both parties, it was impossible for us to procure more than fifteen hogs and some fruits, and we lost the opportunity of bargaining for more than three hundred others.

These canoes had outriggers; each contained from three to five men; and those of middling size might be twenty-four feet long, a single foot only in breadth, and nearly the same in depth. We weighed one of this dimension, which did not exceed fifty pounds. With these frail vessels it is that the inhabitants of these islands make excursions to the distance of sixty leagues, traverse through straits twenty leagues in width, such as that between Atooi and Wohao, where the sea is extremely high. But they are such excellent swimmers that they will almost bear a comparison with the natives of the watery element.

In proportion as we advanced, the mountains seemed to withdraw to a distance within the interior of the island, which exhibited the form of an amphitheatre of considerable magnitude, and of a yellow green. No cascades were to be seen; the trees were less crowded together in the plain, and the villages composed of ten or twelve huts only, very remote from each other. At every instant we had just cause to regret the country we

1786. had left behind us; and, to add to our mortification, we did not find an an-
May. choring place well sheltered till we came to a dismal coast, where torrents of lava had formerly flowed, like the cascades which pour forth their waters in the other part of the island.

After having steered south-west by west, as far as the south-west point of the island of Mowee, I hauled to the west, and afterwards to the north-west, in order to gain the anchorage where the *Astrolabe* had already brought up in twenty-three fathoms, hard grey sand, about a mile from the shore. We were no otherwise sheltered than by a large promontory topped with clouds, which from time to time occasioned us some severe squalls; and the winds changing every instant we were continually dragging our anchors. This road was rendered still more unsafe from our exposure to currents, which prevented our riding head to wind, except during the squalls; but these rendered the sea so rough, that our boats could not sail but with the utmost difficulty. I nevertheless immediately dispatched one to sound in different directions. The officer reported that the bottom was the same all the way to the shore; that the depth diminished gradually, and that it was still seven fathoms at two cables' length from the landing place; but when we weighed our anchor, I found that the cable was rendered absolutely unserviceable by friction, and that under a slight stratum of sand there must have been a rocky bottom.

The Indians of the villages of this part of the island hastened alongside in their canoes, bringing, as articles of commerce, hogs, potatoes, bananas, roots of arum, which the Indians call *tarro*, with cloth and some other curiosities making part of their dress. I would not permit them however to come on board till the frigate was moored and the sails handed. I told them that I was *taboo* *, a word which I had learned from the English

* A word which, according to their religion, signifies a thing which may not be touched, or a consecrated place into which they are not permitted to enter.

For the signification of words in the language of the Sandwich Islands reference must be made to the vocabulary of captain Cook, who made a long stay at these islands, and who possessed advantages which no other navigator has been able to procure to render his communications with these people

accounts, and which was attended with all the success I expected. Mr de Langle, who had not taken the same precaution, had his decks in an instant crowded with a multitude of Indians. But they were so docile and so apprehensive of giving offence, that it was extremely easy to prevail on them to return to their boats. I had no idea of a people so mild and so attentive. When I permitted them to come on board my ship, they did not advance a step without our concurrence; they always evinced a fear of displeasing us; and the greatest good faith prevailed in their dealings. Our pieces of old iron hoop strongly excited their desires, and they showed no want of address in making a good bargain to procure them. They steadily refused to sell any quantity of cloth or number of hogs in the wholesale way, aware that they might derive more profit by the separate sale of each individual article.

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May.

the more instructive. To these motives of confidence we may add the well-known talents of Anderson, from which he derived the greatest assistance.

Dixon has given a vocabulary of the language of the Sandwich Islands, in which the word *taboo* signifies embargo, though in his journal he explains the ceremony of the *taboo* in the same manner as captain Cook.

The following is a comparative view of words of the same meaning, taken from the two vocabularies, which proves the errors that may be made, when, to a perfect ignorance of any language, is added the uncertainty of the mode of expressing the pronunciation of words, which varies according to the individuals who utter them.

English Words.	Correspondent Words from the Vocabularies of	
	COOK.	DIXON.
Cocoa Nut	<i>Eeneeo</i>	<i>Neebu.</i>
The Sun	<i>Hai, raa</i>	<i>Malama.</i>
Gourd or Calabash	<i>Aieebo</i>	<i>Tibo.</i>
Woman	{ <i>Wabeine</i>	{ <i>Cobabeene.</i>
	{ <i>Mabeine</i>	
Brother	<i>Tooanna</i>	<i>Titu-nanie.</i>
Cord	<i>Heabo.</i>	<i>Touro.</i>

The vocabulary of Cook, though the most perfect, comes also in support of my assertion. We find the word which denotes woman in two different places, no doubt by repetition. It is probable that he learned it from two different individuals whose pronunciation was different: for in one place he writes *wabeine*, and in the other *mabeine*. (French Editor.)

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This habit of traffic, and knowledge of iron, which, from their own confession, they did not acquire from the English, are new proofs of the communication which these islands formerly had with the Spaniards*. A century ago that nation had very strong reasons for not making known these islands, because the western seas of America were infested with pirates, who might have found supplies of provisions there; but who, on the contrary, from the difficulty of procuring them, were obliged to run to the west towards the Indian ocean, or to return to the Atlantic sea by Cape Horn. When the navigation of the Spaniards became reduced to a single galleon from Manilla, I suppose that this vessel, which was extremely rich, was ordered by the proprietors to keep a fixed course,

* It appears certain that these islands were discovered for the first time by Gaetan, in 1542. This navigator sailed from the port of Nativity on the western coast of Mexico, in 20° north latitude. He stood to the westward, and, after having run nine hundred leagues in that direction (and consequently without changing his latitude) he fell in with a group of islands, inhabited by savages almost naked. These islands were surrounded with coral rocks; they afforded cocoa nuts and other fruits, but neither gold nor silver. He named them Kings' Islands, probably from the day of making the discovery; and another island, which he discovered twenty leagues farther to the westward, he called Garden Island. It would have been impossible for geographers to have avoided placing the discoveries of Gaetan precisely where Cook has since found the Sandwich Islands, if the Spanish Editor had not said, that these islands are situate between the 9th and the 11th degrees of latitude, instead of the 19th and the 21st, as every navigator would have concluded from the course of Gaetan.

This omission of ten degrees may be either a mistake in the figures, or a political stroke of the Spanish court, which had a great interest a century ago to conceal the position of all the islands of this ocean.

I am inclined to think it an error of the press, because it would have been absurd to have related that Gaetan, taking his departure from the 20th degree of latitude, sailed due west. Beside, if any deception had been intended respecting the latitude, it would have been easy to have mentioned another course.

Be this however as it may, it is certain, that, by adding about ten degrees to the latitude of Gaetan, every thing is found to answer: the same distance from the coast of Mexico, the same people, the same productions and fruits, the same coasts bordered with coral rock; and lastly, the same extent from north to south: the Sandwich Islands lying nearly between the 19th and the 21st degree, as those of Gaetan between the 9th and 11th. This additional proof, joined to those already mentioned, appear to me to afford the highest degree of evidence to this discussion. I may also add, that there is no group of islands between the 9th and 11th degree; which is in the common track of the galleons from Acapulco to Manilla.

which might diminish their risques. Whence it happened by degrees, that this nation lost even the remembrance of these islands, which are preserved in the general chart to Cook's third voyage, by lieutenant Roberts, with their ancient position 15° to the eastward of the Sandwich Islands: but their identity with these last being in my opinion demonstrated, I have thought proper, by erasing them, to clear the surface of the sea.

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May.

It was so late before our sails were handed, that I was obliged to postpone going on shore at this place till the next day, where nothing could detain me but a convenient watering-place: but we had already observed, that this part of the coast was altogether destitute of running water, the slope of the mountains having directed the fall of all the rains towards the weather side. It is probable that the labour of a few days might be sufficient to supply the whole island with so valuable a necessary of life; but these Indians are not yet arrived at the requisite degree of industry, though in many other respects so greatly advanced. From the narratives of the English we are well acquainted with the form of their government; and the extreme subordination which prevails among them is a proof that there is an acknowledged power, which extends gradually from the king to the lowest chief, and of which the whole weight bears upon the people. My imagination was delighted in comparing these with the inhabitants of Easter Island, whose industry is at least equally advanced. The monuments of the latter show even more intelligence, and their cloths are better manufactured and their houses better built; but their government is so vicious, that no person has a right to check irregularities. They acknowledge no authority; and though I do not think them absolutely depraved, it is but too common for their licentiousness to produce mischievous, and even fatal consequences. When I contrasted these two societies, all the advantages were in favour of the natives of the Sandwich Islands, though my prejudices were strong against them on account of the death of captain Cook. It is more natural for navigators to regret the loss of so great a man, than coolly to examine whether some imprudence on his part might

1786. not in a manner have compelled the inhabitants of Owyhee to have re-
May. course to a just and necessary defence *.

* It is but too certain that the English commenced hostilities. This is a truth which it would be in vain to conceal. I need only seek for the proofs in the narrative of the friend of captain Cook, of the man who regarded him as his father, and whom the natives supposed to be his son; I mean captain King, who, after a faithful narrative of the events which led to his death, says, "this confidence I was always fearful might, at some unlucky moment, put him off his guard." Vol. III. page 55.

The reader may also judge for himself by comparing the following circumstances.

Cook imprudently gave orders to fire with ball, if the workmen were disturbed, though he had the incident before him of ten men belonging to captain Furneaux's crew, who were cut off by the New Zealanders, in consequence of their having fired two shot at certain individuals who had committed the trifling theft of some bread and fish.

Pareea, one of the chiefs, reclaiming his canoe, which had been seized by Cook's people, was struck down by a violent blow on the head with an oar. When he recovered he had the generosity to overlook this treatment, and returned a short time afterwards, bringing a hat which had been stolen, and appeared apprehensive lest captain Cook should put him to death, or at least punish him.

Before any other crime, except that of stealing the boat, had been committed, some great guns had been fired at two large canoes which were endeavouring to make their escape.

Nevertheless, after these events, Cook proceeded to the village where the king then was, and was received with the usual marks of respect, the people prostrating themselves before him.

There was no sign of any hostile intention on the part of the islanders, when the boats placed across the bay fired again at some canoes that were attempting to get out, and unfortunately killed a chief of the first rank.

This disaster enraged the natives. One of them offered defiance to captain Cook, and threatened to throw a stone at him which he held in his hand, which provoked captain Cook to fire a load of small shot, but the man having his war mat on it produced no effect. This discharge of the musket was the signal of engagement. Phillips was instantly in danger of being stabbed. Cook then fired a second time with ball, and killed one of the foremost of the natives. The attack immediately became serious. The soldiers and seamen made a general discharge of musketry. Four marines were killed, and three others, with the lieutenant, dangerously wounded, when captain Cook, aware of his situation, repaired to the sea-side. He called to the boats to stop firing, and to pull in to receive him and his people. At this instant he was stabbed in the back, and fell on his face into the water.

It may likewise be added, that captain Cook, intending to convey the king and his family on board his ship, either by persuasion or force, and having for that purpose penetrated into the country, made too weak a preparation for such an attempt, by taking with him a detachment of only ten men. (French Editor.)

The night was perfectly calm, with the exception of a few occasional squalls, which did not last above ten minutes. At day-break the Astrolabe's long-boat was dispatched, with M^{essrs} de Vaujuas, Boutin and Bernizet, who had orders to examine a very deep bay to the north-west, where I supposed the anchorage to be better than at the place where we were: but, though practicable, it proved not preferable to that which we occupied. According to the report of these officers, this part of the island of Mowee affording neither water nor wood, and having very bad roads, must be little frequented by navigators.

1786.

May.

At eight in the morning four boats belonging to the two frigates were ready to set off. The two first carried twenty armed soldiers, commanded by M^r de Pierrevert, one of the lieutenants. M^r de Langle and myself, with all the passengers and officers who were not detained by their duty on board, were in the two others. This preparation did not alarm the natives, who since day-break had been alongside in their canoes. These Indians continued their traffic without being in the least disposed to follow us, and preserved the same air of confidence in us, which their countenances had never ceased to express. About a hundred and twenty persons, men and women, waited for us on the shore. The soldiers, with their officers, landed first. We marked the space we wished to reserve to ourselves; and the military, having fixed their bayonets, performed the same evolutions as if in the presence of an enemy. These formalities made no impression on the natives. The women showed by the most expressive gestures, that there was no mark of kindness which they were not disposed to confer upon us; and the men, in the most respectful attitude, endeavoured to discover the motive of our visit, in order to anticipate our desires. Two Indians, who appeared to have some authority over the others, advanced, and with great gravity made a speech of considerable length, of which I did not understand a single word; and each offered me a present of a hog, which I accepted. In return I gave them medals, hatchets and other pieces of iron, which were of inestimable value to them. My liberality produced a striking effect. The women redoubled their caresses; but they were little seductive. Their features had

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1786. no delicacy, and their dress permitted us to observe, in most of them,
May. traces of the ravages occasioned by the venereal disease. As no women had come on board in the canoes, I was disposed to think, that they attributed to the Europeans those evils of which they bore the marks; but I soon perceived that this remembrance, supposing it real, had not left in their minds the smallest resentment.

I shall here take the liberty to examine, whether the modern navigators are the true authors of these evils, and whether this crime, with which they reproach themselves in their narratives, be not more apparent than real. To give to my conjectures the greater weight, I shall support them by the observations of Mr Rollin, a very enlightened man, and surgeon of my ship. He visited in the island several inhabitants attacked by this disease, and observed appearances, the gradual developement of which would have required in Europe twelve or fifteen years. He likewise saw children of seven or eight years of age, in whom it prevailed, and who could only have contracted it during the period of gestation. I must farther observe, that captain Cook, on his first arrival at the Sandwich Islands, landed only at Atooi and Oneecheow; and that nine months after, on his return from the north, he found that the inhabitants of Mowee, who came on board, were almost all affected with it. As Mowee is sixty leagues to the windward of Atooi, this progress seems to me to be too rapid not to afford some doubts upon the subject*. If to these different observations be added such as may result from the ancient communication of these islanders with the Spaniards, it will doubtless appear probable, that they have long since shared with other nations in the misfortunes attached to this scourge of humanity.

I have thought this discussion due to modern navigators. All Europe, misled by their own narratives, have continually reproached them for a

* It appeared to captain Cook, that the inhabitants of Mowee had been informed of his anchoring at Atooi and Oneecheow. It would not therefore be strange, that the venereal disease should have been communicated in the same time as the news: beside, Bougainville is convinced that the inhabitants of the islands of the Pacific Ocean have intercourse with each other to very considerable distances. See his Voyage, p. 234. (French Editor.)

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May.

crime, which the chiefs of this expedition supposed it out of their power to have prevented. There is a reproach, however, which they cannot escape; namely, the not having taken sufficient precautions to avoid the evil; and if it be nearly demonstrated, that this disease is not the effect of their imprudence, it has not equally been shown, that their communication with this people did not give it greater activity, and render it's consequences much more dreadful *.

After having visited the village, I ordered six soldiers and a serjeant to attend us, and I left the others at the landing-place, under the command of Mr de Pierrevert, to guard our boats, from which none of the sailors had come on shore.

Though the French were the first who, in modern times, had landed on the island of Mowee, I did not think it my duty to take possession in the name of the king. The customs of Europeans on such occasions are completely ridiculous. Philosophers must doubtless lament to see that men, for no better reason than because they are in possession of fire-arms and bayonets, should make no estimation of sixty thousand of their fellow creatures, and should consider as an object of conquest a land fertilised by the painful exertions of it's inhabitants, and for many ages the tomb of their ancestors. These islands have fortunately been discovered at a period when religion no longer serves as a pretext for violence and rapine. Modern navigators have no other object in describing the manners of remote nations, than that of completing the history of man, and the knowledge they endeavour to diffuse has for it's sole aim to render the people they visit more happy, and to augment their means of subsistence.

It is in pursuance of these principles that they have already conveyed to remote islands black cattle, goats and sheep; have planted trees, sown

* It is not to be doubted that modern navigators deserve the reproach of having knowingly communicated the venereal disease to the islanders of the South Sea. Captain Cook does not disguise the truth in his narratives. See his third voyage, vol. i. p. 141 and 382, and vol. ii. p. 148. (French Editor.)

1786. useful grain in all these countries, and supplied the inhabitants with tools
May. proper to accelerate the progress of their industry. For our part we should be amply repaid for the extreme fatigues of this expedition, if we could succeed in destroying the custom of human sacrifices, which is said to be generally prevalent among the islands of the South sea. But, notwithstanding the opinions of Mr. Anderson and captain Cook, I think with captain King, that a people so good, so mild and so hospitable cannot be cannibals. An atrocious religion does not easily accord with gentle manners; and, since captain King says, that the priests were their best friends, I think I may conclude, that if mildness and humanity have already made progress in this class, which has the charge of human sacrifices, the rest of the inhabitants must be still less ferocious. It seems evident therefore that anthropophagy no longer exists among these islanders, though its cessation is probably of recent date *.

The soil of this island is entirely formed of decomposed lava, and other volcanic substances. The inhabitants have no other drink but a brackish water, obtained from shallow wells, which afford scarcely more than half a barrel a day. During our excursion we observed four small villages of about ten or twelve houses each, built and covered with straw in the same manner as those of our poorest peasants. The roof has a double slope; the door, which is in the gable end, is about three feet and a half high, and consequently cannot be entered without stooping, and is shut by a simple latch, which any one can open and obtain admittance. Their moveables consist of mats, which, like our carpets, afford a clean and neat floor, upon which they sleep; and they have no other culinary utensils than large calabash shells, to which they give whatever form they please while they are green; and they varnish and trace upon them every kind of design in black. I have likewise seen some which were glued toge-

* The horror exhibited by the natives of these islands when suspected of being cannibals, and that which they testified when asked, whether they had eaten the body of captain Cook, confirms in part the opinion of la Pérouse. Nevertheless Cook had himself acquired the most certain information of this practice among the New Zealanders, and it cannot be denied that the use of human sacrifices, and the practice of eating their enemies taken in war, are prevalent in all the islands of the South sea. (French Editor.)

ther, and by that means formed very large vessels. It appears that this cement is capable of resisting moisture, and I should have been glad to have known its composition. Their stuffs, of which they have a very great quantity, are made of the paper mulberry, like those of the other islands; but, though painted with greater variety, their fabrication appeared to be inferior. Upon my return I was again harangued by some women, who waited for us under some trees. They offered me several pieces of stuff, for which I paid with hatchets and nails.

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May.

The reader must not expect to find any detail in this place concerning a people with whom the world has been made so well acquainted by the English navigators, who remained four months in these islands, whereas our stay was only a few hours; and who had the further advantage of understanding the language of the country. We shall therefore confine ourselves to the relation of our own history.

We left the island at eleven in the morning in good order, without confusion, and without having the least cause of complaint against any one. We arrived on board at noon, where Mr de Clonard had been visited by a chief, and had purchased of him a cloak and a fine helmet, ornamented with red feathers. He had likewise bought upwards of an hundred hogs, with bananas, sweet potatoes, tarro, a large quantity of cloth, mats, a canoe with an out-rigger, and various other small articles of feathers and shells. On our arrival the two frigates dragged their anchors. The wind was strong from the east-south-east, and we drove towards Morokinne, which was, however, sufficiently distant to permit us to hoist in our boats. I made the signal for weighing, but before the anchor was up I was obliged to set sail, and drag till we had passed the Morokinne Isle, that the current might not drive us beyond the channel. If the anchor had unfortunately struck in any cavity of a rock during this manœuvre, or if the ground had not been sufficiently uniform for it to slide along the bottom, I should have been obliged to cut the cable.

We did not completely get our anchor in till five in the evening, when

1786. it was too late to direct our course between the isle of Ranai and the western
 May. point of Mowee; a new channel I was desirous of examining, but prudence did not admit of the attempt during the night. Till eight in the evening we had such light breezes that we could not advance more than half a league. At length the wind fixed at the north-east, and I stood to the westward, passing at an equal distance from the north-west point of the island of Tahoorowa, and the south-west point of the island of Ranai. At day-break I made for the south-west point of the island of Morotoi, which I coasted at three quarters of a league distance, and came into the open sea, like the English, through the channel which separates the island of Wohao from that of Morotoi. This last island had no appearance of being inhabited in this part, although, according to the English accounts, it is very populous on the other side. It is remarkable that, in these islands, the most fertile and healthy districts, and consequently the most populous, are always to the windward. Our islands of Guadaloupe, Martinico, &c. have so perfect a resemblance to this new cluster, that, as far as navigation is concerned, the circumstances appeared to me to be exactly the same.

M^{ESSE}rs Dagelet and Bernizet have taken with the greatest care all the bearings of this part of Mowee along which we coasted, as well as those of Morokinne. It was impossible for the English, who never came nearer than ten leagues, to have given any exact information respecting these coasts. M^r Bernizet has drawn a very good plan (*Charts and Plates*, N^o 13 and 14), and M^r Dagelet has joined astronomical observations, which deserve the same confidence as those of Cook, and which, for the convenience of the reader, are all inserted in tables at the end of this work. They show our course and precise situation from day to day, in latitude and longitude, by observation and by reckoning.

June. On the first of June, at six in the evening, we were clear of all the
 1. islands. We had employed less than forty-eight hours in examining them, and at most only fifteen days to clear up a point of geography, which appeared to me of the utmost importance, since it removes from the charts five or six islands which have no existence. The fishes which had followed us from

the vicinity of Easter Island to our anchoring place there disappeared. It is a fact worthy of attention, that the same shoal of fishes had swam fifteen hundred leagues after our frigates. Several bonetas, wounded by our harping irons, carried on their backs a mark which it was impossible for us to mistake, and thus we knew again each day the same fishes we had seen the evening before. I have no doubt, if we had not stopped at the Sandwich Islands, they would have followed us two or three hundred leagues farther, till they came to a temperature too cold for them to bear.

1786.
June.

CHAPTER VII.

Departure from the Sandwich Islands—Signs of approaching the Coast of America.—We make Mount St. Elias—Discovery of Baie de Monti—Boats sent to reconnoitre the Entrance of a large River, to which we preserve the Name of Behring's River—Discover a deep Bay—Favourable Report of several Officers, which induces us to put in there—Risks in entering—Description of the Bay, to which we give the Name of Baie or Port des Français—Manners and Customs of the Inhabitants—Traffic with them—Proceedings during our Stay.

1786. THE easterly winds held us till the latitude of 30° north: the weather
June. was fine; and I steered a northerly course. The fresh provision we had procured during our short stay at the Sandwich Islands ensured the crews of both frigates a sufficiency of wholesome and acceptable food for three weeks; but it was impracticable for us to keep our hogs alive, for want of water and provender, so that I was obliged to salt them according to captain Cook's method. But the hogs were so small, the greater number weighing under twenty pounds a-piece, that they could not be exposed long to the action of the salt, without the meat being corroded, and partly destroyed, which obliged us to consume them the first.

6. On the 6th of June, being in the latitude of 30° north, the wind came round to the south-east, the sky appeared whitish and dull, and every thing indicated that we had passed the boundary of the trade-winds. I greatly feared I should soon have to regret the fair weather, which had preserved our health, and enabled us almost every day to take observations of lunar distances, or at least compare the true time of the meridian at which we arrived with that of our time-keepers.

My apprehensions of mists were speedily realised: they began on the 9th of June, in the latitude of 34° north, and from that time the weather did not once clear up till the 14th, when we reached the latitude of 41° . I first thought these seas more foggy than those which separate Europe and America: but I should have been greatly mistaken, if I had irrevocably embraced this opinion. The fogs of Nova Scotia, Newfoundland, and Hudson's Bay, have an incontestable claim to pre-eminence from their constant density; but the dampness to which we were exposed was extreme; the mist or rain drenched all our clothes, we had not a single ray of sun to dry them, and my expedition to Hudson's Bay had taught me by sad experience, that wetness, combined with cold, is probably the most effective cause of scurvy*. No one yet exhibited any symptoms of it: but after so long a time spent at sea, the predisposition to it must be strong. Accordingly I ordered buckets full of embers to be placed under the half-deck, and between decks where the crew slept; I furnished every sailor and marine with a pair of boots; and the cloth breeches and waistcoats, which had been laid up in store ever since we had left the seas of Cape Horn, were returned to them.

1786.
June.
9.

My surgeon, who shared with Mr Clonard the superintendence of all these particulars, proposed to me to mix with their morning's grog† a weak infusion of bark, which, without making any sensible alteration in the taste, might have very salutary effects. This mixture I was obliged to order to be made privately, otherwise the crews would certainly have refused to drink it: but as no one discovered it, no complaint was made of this innovation, which would probably have met with considerable opposition, if it had become a subject of general discussion.

These different precautions were attended with the utmost success; but

* Dr. Trotter, physician to the fleet under lord Howe, has shown in a very ingenious publication, on the health of seamen, that la Pérouse was not mistaken. T.

† A liquor composed of one part brandy, and two parts water, much more wholesome for the crew than pure brandy.

1786. they were not the whole that employed our leisure during such a long
June. passage: my carpenter made a corn-mill, after a plan of M^r de Langle's, which was of great service to us.

The superintendents of the victualling department, persuaded, that kiln-dried corn would keep better than flower or biscuit, had proposed to us to take on board a large quantity, to which we had made an addition at Chili. To grind it we were furnished with millstones twenty-four inches in diameter by four and a half thick, which were to be worked by four men. We were assured, that M^r de Suffren had no other mill for the use of his squadron, of course we could not question their being sufficient for a crew so small as ours. But when we came to make use of them, the baker found the corn broken to pieces only, not ground; and of this bad meal the labour of four men, relieved every half hour, during a whole day, had produced only twenty-five pounds. As our corn formed nearly half our means of subsistence, we should have been under no small embarrassment, but for the inventive mind of M^r de Langle, who, with the assistance of a sailor formerly a journeyman miller, contrived to adapt the movement of a windmill to our little stones. He first tried sails turned by the wind with some success; but to these he soon substituted a winch, and thus we were enabled to grind two hundred weight of corn a-day, and obtain from it as good meal as in the ordinary way.

14. On the 14th the wind came round to the west-south-west. The following observations are the result of our long experience. When the wind is but a few degrees to the north of the west, the sky is generally pretty clear, and the sun visible above the horizon; from the west to the south-west, commonly cloudy, with a little rain: from the south-west to the south-east, and even as far as the east, a foggy horizon, and the air loaded with moisture, penetrating even into the cabins, and every part of the ship. Thus a simple inspection of the table of winds will always inform the reader of the state of the weather, and be of utility to those, who may follow us in this navigation: they, too, who may peruse with pleasure the events of our voyage, and at the same time feel interested for those,

who have undergone the fatigue of them, will not think with indifference on navigators, who, at the verge of the earth, and having incessantly struggled against mists and storms, and scurvy, have explored an unknown coast, the theatre of all the geographical fictions*, too readily embraced by modern geographers†.

1786.
June.

* The fictions I mean are the voyage of admiral Fuentes, and the pretended voyages of the Chinese and Japanese on these coasts.

† The particulars of the voyage of admiral Fuentes, or de Fonte, are unquestionably very extraordinary; but I dare not entirely reject them, when I compare the chart of his discoveries with those of Cook, la Pérouse, Dixon, and Meares. It appears from the oration delivered by Buache at the Academy of Sciences, that Lorenzo Ferrer de Maldonado discovered a northwest passage, by entering a strait in Hudson's Bay, the same by which admiral Fuentes passed out from the South Sea, and which is named on maps Repulse Bay. The voyage of Maldonado appears to be authentic: it is dated 1588‡: that of admiral Fuentes was in 1640. Now unless it were proved, that the latter was acquainted with the voyage of Maldonado, and made it the basis of his romance, the agreement between the particulars of the two voyages will leave room for doubt, and in geography every doubt ought to be preserved, till it is removed by irrefragable proofs.

Neither the oration of Buache, nor the Spanish voyage on which it was founded, is yet printed. The reader who wishes to know the disquisitions, to which the voyage of admiral Fuentes has given rise, will find them in the following works:

Explication de la Carte des nouvelles Découvertes au Nord de la Mer du Sud. "Explanation of the Chart of new Discoveries to the North of the Pacific Ocean," by de Lisle, &c. Paris, 1752.

Considérations géographiques et physiques, &c. "Geographical and physical Reflections on the new Discoveries to the North of the Great Ocean, commonly called the South Sea," by Philip Buache, &c. Paris, 1753.

Nouvelles Cartes des Découvertes de l'Amiral de Fonte, &c. "New Charts of the Discoveries of Admiral Fuentes, &c." by de Lisle, &c. Paris, 1753.

Lettre d'un Officier de la Marine Russe à un Seigneur de la Cour, &c. "Letter from an Officer in the Russian Navy to a Nobleman at Court, &c." Berlin.

Observations critiques sur les nouvelles Découvertes de l'Amiral Fuentes, &c. "Critical Remarks on the new Discoveries of Admiral Fuentes, &c." by Robert de Vaugondy, jun. &c. Paris, 1753.

And the periodical publications entitled *Journal historique, Mémoire pour l'Histoire des Sciences et des Beaux Arts*, *Journal des Savans*, and *Journal économique*, for the year 1753. (French Editor.)

‡ Is it probable, that a Spanish vessel should be sent in search of a north-west passage, at the time when Philip was no doubt straining every nerve for the equipment of his famous armada? T.

1786.
June.

Of this part of America, as far as Mount S^t Elias, in the latitude of 60°, captain Cook had only a transient view, Nootka Sound excepted, where he made some stay: but from Mount S^t Elias to the point of Alashka, and thence to Icy Cape, that celebrated navigator explored the coast with that courage and perseverance, of which all Europe knows him to have been capable. To explore that part of America, therefore, which lies between Mount S^t Elias and Monterey Bay, must be a work of high importance to commerce and navigation: but it would require some years, and we will not deny, that, having only two or three months to bestow on it, on account of the season, and still more of the vast plan of our voyage, we must leave much of the minutiae to the navigators that may follow us. Many ages in all probability will elapse, before all the bays and harbours of this part of America are perfectly known; but the true direction of the coast, and the determination of the latitude and longitude of its most remarkable points, will secure to our labours a degree of utility, of which no mariner will be insensible.

From the time we left the Sandwich Islands till we made the land of Mount S^t Elias, the wind had never ceased a moment to be favourable. As we advanced to the north, and approached America, we observed sea-weeds of a species entirely new to us. A ball of the size of an orange terminated a stalk forty or fifty feet long, resembling an onion run to seed, but much superior in size. Large whales, ducks, and divers, likewise indicated our approximation to the land, which at length appeared on the 23d, at four in the morning. As the mist cleared away, a long chain of mountains covered with snow burst at once upon our sight, which we might have discerned thirty leagues farther off, had the weather been clear. We distinguished in these the Mount S. Elias of Behring, with its summit rising above the clouds. (See *Charts and Plates*, 15, 16, 17, 18.)

The sight of land, after a long voyage, usually excites feelings of delight; but on us it had not this effect. The eye wandered with pain over masses of snow, covering a barren soil, unembellished by a single tree. The mountains appeared to be at a very little distance from the sea, which

broke against the cliffs of a table-land three or four hundred yards high. This plain, black as if burned by fire, and totally destitute of verdure, formed a striking contrast with the whiteness of the snow, which was perceived piercing the clouds, and served as a base to a chain of mountains, which appeared to extend fifteen leagues east and west. At first we thought ourselves very near; the summits of the mountains seemed to hang over our heads, and the snow diffused a brightness calculated to deceive eyes unaccustomed to it: but as we advanced, we perceived between us and the elevated plain low lands covered with trees, which we took for islands. Among these it was probable we should find shelter for our ships, as well as wood and water. Accordingly I prepared to reconnoitre these supposed islands, by the help of the easterly wind, which blew along shore; but it suddenly shifted to the south, the sky became very gloomy in that part of the horizon, and I thought it adviseable to haul the wind, which set right on the shore, and wait for a more favourable opportunity. At noon we had an observation, which gave us the latitude of $59^{\circ} 21'$ north, and our longitude by the time-keepers was $143^{\circ} 23'$ west. A thick fog enveloped the land during the whole of the 25th: but on the 26th the weather was very fine, and the coast appeared very distinct in all its parts by two in the morning. I ran along it at the distance of two leagues, in seventy-five fathoms of water, muddy bottom, very desirous of finding a harbour, in which I had some reason to hope I was successful.

1786.

June.

25.

26.

I have already mentioned a table-land three or four hundred yards high, serving as a base to vast mountains, a few leagues within it; and soon we perceived to the eastward a low point covered with trees, which appeared to join the table-land, and terminate at a short distance from a second chain of mountains, which appeared farther to the east. We were all unanimously of opinion, that the table-land terminated at this low point covered with trees, and was an island separated from the mountains by an arm of the sea, the direction of which must be east and west like that of the coast, and in this supposed channel we expected to find a convenient shelter for our vessels.

1786.
June.

Towards this point I steered my course, keeping the lead constantly going, and never found less than forty-five fathoms of water, with a muddy bottom. During the whole day the wind had been very weak, varying from west to north; and at two in the afternoon I was obliged to come to an anchor on account of a calm. At noon our latitude by observation was $59^{\circ} 41'$, and our longitude by the time-keepers $143^{\circ} 3'$ west. We were three leagues to the south-west of the woody point, which I still believed to be an island. I had sent my barge, as early as ten in the morning, under the command of M^r Boutin, to reconnoitre this channel or bay: M^{esses} de Monti and de Vaujuas had been sent from the *Astrolabe* for the same purpose: and we remained at anchor waiting for their return. The sea was extremely smooth; and the current set south-south-west, at the rate of a knot and a half an hour, which confirmed me in my opinion, that the woody point formed at least the mouth of a large river, if not of a channel.

The barometer had fallen half an inch in the last twenty-four hours; the sky appeared very lowering; every thing indicated, that the dead calm, which obliged us to come to an anchor, would be succeeded by foul weather. At length, at nine in the evening, our boats returned, and the three officers unanimously reported, that there was neither channel nor river; and that the coast merely formed a pretty large semicircular bay to the north-east, having thirty fathoms of water, with a muddy bottom, and entirely open to the winds from the south-south-west to the east-south-east, which are the most dangerous. The sea broke violently on the shore, which was covered with drift-wood. M^r de Monti had landed with great difficulty; and, as he was the commanding-officer of this little division of boats, I gave the place the name of *Baie de Monti*. They added, that the woody point joined other land still flatter, and without any trees, which gave it the appearance of being terminated by the sea, and thus occasioned our mistake. M^{esses} de Monti, de Vaujuas, and Boutin, had taken the bearings of the different points by the compass. Their unanimous report left us no doubt respecting the conduct we had to pursue. I made the signal to get under way; and as the weather

threatened to prove very foul, I availed myself of a breeze which sprung up from the north-west, to run to the south-east and gain an offing*.

1786.
June.

The night was calm, but foggy: the wind varied every moment, but at length it settled in the east, and blew very hard for four and twenty hours.

On the 28th the weather grew a little more clear. We had an observation in latitude $59^{\circ} 19'$ north, and longitude $142^{\circ} 41'$ west by our time-keepers. The coast was greatly obscured by mists, so that we could not distinguish the points we had seen the preceding days. The wind was still easterly; but the barometer rose, and every thing indicated a favourable change. At five in the evening we were only three leagues from the land, in forty fathoms of water, muddy bottom; and the mists being a little dispersed, we took bearings of the principal points of land, which

28.

* It will no doubt appear strange, that I should dispute the report of three officers, and maintain, that la Pérouse formed a more accurate judgment of the coast from on board his own ship. It is for the reader to decide on the proofs of my assertion; and, if he have any doubt, he may consult the voyage of Dixon and the charts accompanying it.

I assert then, that de Monti Bay is the Port Mulgrave of Dixon, where he anchored on the 23d of May of the year following, sheltered from all winds by an island, which forms a kind of mole.

Dixon says, p. 40: "The situation Mr. Turner had pitched on for us to anchor in, was round a low point to the northward, about three miles up the bay.

"These islands, in common with the rest of the coast, are entirely covered with pines of two or three different species, intermixed here and there with hazle, and various kinds of brush-wood."

Dixon fixes the latitude of Port Mulgrave at	59° 33'
And it's longitude, from the meridian of London, at 140, which makes,	
from the meridian of Paris,	142 20
La Pérouse makes the latitude of Baie de Monti	59 43
And it's longitude	142 40

If the three officers sent by la Pérouse did not proceed quite to the head of the bay, it is not at all surprising, that they thought they saw a continuation of the coast, and that the numerous small islands at the head of the bay concealed from them the passage, which separates these islands from the continent. (French Editor.)

1786. formed a continued series with those of the preceding days, and served,
June. with those made afterwards with the utmost care, for the construction of the charts accompanying this work. Navigators, and they who are particularly attached to the study of geography, will perhaps feel some satisfaction in being informed, that to give greater accuracy to the views and delineations of the coasts and remarkable points, M^r Dagelet verified and corrected the bearings taken by the azimuth compass, by measuring with the sextant the angles the different head-lands made with each other, to ascertain the mutual distances, and at the same time determining the elevation of the mountains above the level of the sea. This method, though not rigorously exact, is accurate enough to enable seamen to judge of the distance of a coast by its elevation; and thus this academician ascertained the height of Mount St Elias to be one thousand nine hundred and eighty toises, and its distance within land eight leagues*.

29. Our observation on the 29th of June gave us the latitude of $59^{\circ} 20'$ north, and our longitude, by our time-keepers, was $142^{\circ} 2'$ west, so that we had advanced eight leagues to the eastward in the last twenty-four hours. The southerly winds and fogs continued all the 29th, and the weather did not clear up till near noon on the 30th; but we had occasional glimpses of the low lands, from which we were never farther than four leagues distant. By our reckoning we were five or six leagues east of the bay to which captain Cook gave the name of Behring. Our soundings were never less than sixty or seventy fathoms, muddy bottom. At noon our latitude by observation was $58^{\circ} 55'$, and our longitude $141^{\circ} 48'$ by the time-keepers. There being a light wind from the west-south-west, I stood towards the land with all sails set, and got sight of a bay to the eastward, which appeared to be very deep, and which at first I thought to be Behring's Bay. Approaching within a league and a half of it, I distinctly perceived that the low lands, as in Baie de Monti, joined higher land, and that there was no bay: but the sea was whitish and very little

* Cook says, that Mount St Elias lies twelve leagues within land, in latitude $60^{\circ} 27'$, longitude 219° east from Greenwich. Third Voyage, Vol. III. (French Editor.)

salt, so that we were evidently at the mouth of a river, which was undoubtedly very large, as it changed the colour and taste of the sea two leagues in the offing. Accordingly I made the signal to come to an anchor in thirty fathoms, muddy bottom, and I dispatched my barge, under the command of M^r de Clonard, my first lieutenant, accompanied by M^{essrs} Monneron and Bernizet. M^r de Langle had sent his barge also, and his pinnace, with M^{essrs} Marchainville and Daigremont. These officers returned at noon. They had run along the shore as near as the breakers would allow, and had discovered a sand-bank, just level with the water, at the mouth of a great river, which discharged it's waters into the sea by two pretty large channels; but each of these had a bar, similar to that of the river of Bayonne, on which the sea broke with such violence, that it was impossible for our boats to get near. M^r de Clonard spent five or six hours to no purpose in search of an entrance; but he saw smoke, a proof that the country is inhabited. From the ship we perceived the water very smooth beyond the bank, and a basin several leagues wide, and two leagues deep; so that when the sea is smooth it may be presumed ships, or at least boats, may enter the gulph: but as the current is very strong, and the roughness of the sea on the bars scarcely suffers a moment's intermission, a simple view of the place is sufficient to deter a seaman from entering it. On seeing this bay, I thought it might possibly be that where Behring landed; and if so the loss of his boat's crew might with more probability be ascribed to the turbulence of the waves than to the savageness of the Indians*. To this stream I preserved the name of Behring's river; and it appears to me, that the bay of this name does not exist, captain Cook rather supposing than perceiving it, as he passed it at ten or twelve leagues distance †.

1786.

June.

* Here there is a double mistake: first, it was captain Tschirikow, not captain Behring, who lost his boats; secondly, this misfortune happened in the latitude of 56°, as Muller relates in his Account of the Voyages and Discoveries of the Russians. See p. 249 of the French translation of his work. (French Editor.)

† The place which la Pérouse here calls Behring's river is unquestionably the same with the Behring's bay of Cook. It remains to be decided, whether the change of colour and freshness of the sea be sufficient to ascertain, that the inlet is a river; whether the freshness may not proceed from the

1786. On the first of July, at noon, I weighed with a slight breeze from the south-west, running along the coast at the distance of two or three leagues. Our observation at our anchorage gave us $59^{\circ} 7'$ of north latitude; and our timekeeper, $141^{\circ} 17'$ of west longitude. The entrance of the river then bore north 17° east, and Cape Fair-Weather, east 5° south. A light breeze from the west carried us along the shore near enough to have discerned men with our glasses, if any had been on it; but we saw only breakers, which appeared to render landing impracticable.

2. On the 2d, at noon, I set Mount Fair-Weather, bearing north 6° east by the compass; our latitude by observation being $58^{\circ} 36'$; our longitude by the timekeepers, $140^{\circ} 31'$; and our distance from land two leagues. At two in the afternoon we perceived an inlet, a little to the eastward of Cape Fair-Weather, which appeared to be a very fine bay, and I steered my course towards it. At the distance of a league I sent the jolly-boat, un-

quantity of enormous masses of ice continually falling from the summit of the mountains, and the colour, from the earth of the shore on which the sea breaks with so much fury.

Whether river or bay, perhaps indeed both (for bays being formed by mountains advancing into the sea, the probability is, that there is a river or torrent at the head), the following are proofs of the identity of the places.

Cook determines the latitude of the mouth of the bay to be $59^{\circ} 18'$; la Pérouse, being to the west of it, makes it $59^{\circ} 20'$.

Cook's longitude, on board his ship, was $220^{\circ} 19'$ east of Greenwich, or $139^{\circ} 41'$ west; to which $2^{\circ} 20'$, the difference between the meridians of Greenwich and Paris, being added, we shall have Cook's longitude $142^{\circ} 1'$ west of Paris; and la Pérouse fixes his longitude at $142^{\circ} 2'$, which makes a difference of only one minute, with the addition of the two leagues, which Cook was farther from the coast.

Cook set the opening of the bay north 47° east: la Pérouse, who was two leagues nearer the shore, north 33° east.

Cook, at eight leagues from the land, had seventy fathoms of water, muddy bottom: la Pérouse, five or six leagues from the shore, had the same bottom, and consequently sixty or seventy fathoms of water.

If I had not carried my proofs to the point of conviction, I would entreat the reader himself to mark on the chart Cook's situation on the 6th of May, 1778; and that of la Pérouse on the 29th of June, 1786, and to follow their course pointed out in their journals, paying attention to the variation of the compass, as ascertained by the two navigators. (French Editor.)

der the command of M^r de Pierrevert, with M^r Bernizet, to reconnoitre it. Two boats, commanded by M^{esses} de Flassan and Boutervilliers, were sent from the Astrolabe for the same purpose. From the vessel we perceived a large mole of rocks, behind which the sea was very smooth. This mole appeared to be six or eight hundred yards long from east to west, and ended about two cables lengths from the point of the main land, leaving a pretty wide opening ; so that nature seemed to have constructed in the remotest part of America a harbour resembling that of Toulon, but on a gigantic scale, adapted to her ampler powers. This new harbour extended three or four leagues into the land. M^{esses} de Flassan and Boutervilliers made a highly favourable report of it: they had gone in and out of it several times ; constantly found seven or eight fathoms of water in the middle of the passage, and five fathoms within forty yards, or thereabout, of either extremity ; and added, that within the bay there were ten or twelve fathoms, with a good bottom. Their report determined me to steer for the passage. Our boats were sent a-head to sound, with orders, when we came near the points, to lie on their oars, one at each extremity, so that the ships would have nothing to do but pass between them.

1786.
July.

We soon perceived some savages, who made signs of friendship, by displaying and waving white mantles, and different skins. Several of the canoes of these Indians were fishing in the bay, where the water was as smooth as in a basin, while the mole was covered with foam by the breakers ; but the sea was very calm beyond the passage, a fresh proof to us that there was a considerable depth of water.

At seven in the evening we were off the entrance ; but the wind was faint, and the ebb so strong, that it was impossible to stem it. The Astrolabe was drifted out pretty fast, and I was obliged to anchor, that I might not be carried away by the current, with the direction of which I was unacquainted. As soon, however, as I was certain that it ran directly to the offing, I weighed and rejoined the Astrolabe, far from determined what steps I should take the next day. The very rapid current, of which our officers had made no mention, abated my eagerness to put into this

1786. harbour ; for I was by no means ignorant of the great difficulties that al-
 July. ways attend the entering or sailing out of narrow passages, where the
 tides are very strong ; and as I was under the necessity of exploring the
 coasts of America during the summer season, I was sensible that a forced
 stay in a harbour, the departure from which required a combination of fa-
 vourable circumstances, would be considerably detrimental to the success
 of my expedition. I stood off and on, however, the whole night ; and
 in the morning I hailed M^r de Langle, and imparted to him my sentiments.
 Still the report of both his officers was very favourable ; they had sounded
 the passage, and the interior of the bay : they declared, that they had
 several times stemmed the current, which appeared to us so strong, with
 their boat ; so that M^r de Langle thought this harbour would be extremely
 convenient for us ; and his reasons appeared to me so good, that I hesi-
 tated not to yield to them.

This port was never seen by any navigator. It is thirty-three leagues
 north-west of that of Los Remedios, the extreme boundary of the Spanish
 voyages ; about two hundred and twenty-four leagues from Nootka ; and a
 hundred leagues from Prince William's Sound : so that it appears to me, if
 the French government entertained any project of establishing a factory on
 this part of the coast of America, no nation could have the least pretext for
 opposing it *. The calmness of the interior of the bay was very seducing

* Since la Pérouse explored the north-western coast of America from Mount S^t Elias to Monterey, two
 English navigators have nearly followed the same track, but both with commercial views alone.

Dixon, who sailed from England in the Queen Charlotte, accompanied with captain Portlock in
 the King George, in September, 1785, anchored at Owhyhee, one of the Sandwich islands, on the
 26th of May, 1786. La Pérouse passed by Owhyhee on the 28th of the same month, anchored at
 Mowee the next day, and sailed again the 30th. He made Mount S^t Elias on the 23d of June, 1786 ;
 while Dixon, who left Owhyhee the 13th of June, having directed his course toward Cook's River,
 did not reach the north-western coast of America till the 8th of September. He ran along it from
 Cross Sound to Nootka Sound, without being able to come to an anchor any where. He left it on the
 28th of the same month to return to the Sandwich Islands ; and it was not till the 23d of May, in the
 year following, that he made Mount S^t Elias, and anchored in Port Mulgrave. The priority of la Pé-
 rouse, therefore, is incontestable.

Before Dixon sailed from London, he was acquainted with the expedition fitted out from France,
 but he did not meet with the French vessels, and could have no knowledge of their discoveries.

to us, who were under an absolute necessity of rummaging our hold, and almost entirely changing the stowage of it, in order to get out six of our guns, which were stowed in the bottom, and without which it would have been imprudent to navigate the Chinese seas*, so frequently infested by pirates. I gave this place the name of *Port des Français*.

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At six in the morning we stood for the passage, to enter it with the end of the flood. The Astrolabe led, and we stationed a boat at each point as the preceding evening. The winds blew from the west and west-south-west; the direction of the entrance is north and south; so that every thing appeared in our favour: but at seven o'clock, when we were in the passage, the wind chopped about to the west-north-west and north-west by west, so that it was necessary to throw the ship up in the wind and lay all aback. Fortunately the flood carried the ships into the bay, though it drove us within half a pistol-shot of the rocks on the eastern point. I came to an anchor within, in three fathoms and half, rocky ground, at half a cable's length from the shore. The Astrolabe anchored in the like depth of water, on a similar bottom.

During the thirty years that I have followed the sea I never saw two vessels so near being lost; and to have experienced such an event at the verge of the world would have enhanced our misfortune: but we had now escaped this danger. Our long-boats were quickly hoisted out, and with our kedge anchors we warped off, so that we were in six fathoms of water, before the tide had fallen perceptibly. Our keel touched the bottom a few times, it is true, but so slightly as to do the vessel no injury. Our situation would have been no longer embarrassing, had we not been anchored on a rocky ground, which extended several cables length around us, very different from the report of M^{essrs} de Flassan and Boutervilliers. This was

Captain Meares, of the Snow Nootka, left Bengal in March, 1786; touched at Oonalashka in August; and at the end of September reached Prince William's Sound, where he wintered. It was not till 1788 and 1789 that he ran along the coast of America. His voyage is not yet translated into French. (French Editor.)

* We were to reach China by the beginning of February.

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not a time, however, for reflections; it was necessary to extricate ourselves from this bad anchorage, and the rapidity of the tide was a great obstacle to this, the violence of it obliging me to let go a bower anchor. I momentarily apprehended, that the cable would be cut, and we should drive on shore. To add to our anxiety, the wind from the west-north-west freshened greatly; the stern swung very near the rocks; and it was impossible to think of warping off. Accordingly I struck the top-gallant-masts, and awaited the end of the gale, from which we should have had nothing to fear, had we been anchored on a better ground.

Without delay I sent a boat to sound the bay. M^r Boutin reported, that he had found an excellent bed of sand, within four cables length of our anchorage to the west, where we should have ten fathoms of water; but higher up the bay, towards the north, there was no bottom at sixty fathoms, except within half a cable's length of the shore, where there were thirty fathoms, muddy bottom. He told me, likewise, that the north-west wind did not reach the interior of the harbour, where there was a perfect calm.

M^r d'Escures had been dispatched at the same time to examine the head of the bay, of which he brought me a very favourable account. "He had made the circuit of an island, near which we might anchor in five-and-twenty fathoms, muddy bottom. No place could be more convenient for our observatory: wood ready cut lay scattered over the shore; and cascades of the clearest water fell from the summits of the mountains down to the sea. He had proceeded two leagues beyond the island to the head of the bay, which was covered with flakes of ice. He saw the entrance of two vast channels, but, being eager to return with an account of what he had done, had not explored them." From this report our imaginations pictured to us the possibility of penetrating into the interior of America by one of those channels. The wind having subsided at four in the afternoon, we warped to the bed of sand found by M^r Boutin; and the *Astrolabe* was able to get under way, and gain the anchorage of the island. The next day I joined her, by the help of a light breeze at east-south-east, and the assistance of our boats.

During our forced stay at the entrance of the bay, we had been continually surrounded with the canoes of the savages, who offered us fish, skins of otters and other animals, and different little articles of their dress, in exchange for our iron. To our great surprise they appeared well accustomed to traffic, and bargained with as much skill as any tradesman of Europe. Of all our articles of trade, they appeared to have no great desire for any thing but iron: they accepted indeed a few beads; but these served rather to conclude a bargain, than to form the basis of it. We at length prevailed on them to take pewter pots and plates: yet these had only a transient success, iron prevailing over every thing. They were not unacquainted with this metal. Every one had a dagger of it suspended from the neck, not unlike the criss of the Malays, except that the handle was different, being nothing more than an elongation of the blade, rounded, and without any edge. This weapon had a sheath of tanned leather, and appeared to be their most valued moveable. As we examined these daggers very attentively, they informed us by signs, that they made use of them only against the bears and other wild beasts. Some were of copper, but they did not appear to give a preference to these. This metal is pretty common among them: they use it chiefly for collars, bracelets, and various other ornaments; and they also point their arrows with it.

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It was a matter of great question with us whence they procured these two metals. There was no improbability in supposing this part of America to contain native copper, which the Indians might reduce into sheets or ingots: but native iron perhaps does not exist, or at least is so rare, that it has never been seen by the majority of mineralogists*. It cannot be ad-

* Though native or virgin iron is rare, it is found in Sweden, Germany, Senegal, Siberia, and the Island of Elba. I have found it at Erbalonga, a village four or five miles north of Bastia, the capital of Corsica, profusely dispersed through the substance of a rock on the border of the sea, and constantly in an octaedral form. The existence of native iron is confirmed by the specimens extant in most cabinets of natural history, and by the opinion of Stahl, Linnæus, Margraff, and others.

Therefore, as iron mines exist in America, native iron also may be found there: not that I would hence infer, that the iron seen by la Pérouse in possession of these Indians came from this source; for I think with Cook, that they must have had it from the Russians, who, departing from Kamtschatka, have extended their commerce thus far; or by means of their intercourse with the inland tribes, who procure it from our settlements on the north-east coast of America. (French Editor.)

1786. mitted, that these people are acquainted with the method of reducing iron
July. ore to the state of metal. Beside, the day of our arrival we saw necklaces of beads, and some little articles of brass, which, as is well known, is a composition of copper and zinc*. Every thing, therefore, leads us to presume, that the metals we saw came either from the Russians, from the servants of the Hudson's Bay company, from American merchants travelling into the interior parts of the country, or from the Spaniards: but I shall hereafter show that it most probably came from the Russians. We brought away many specimens of this iron, which is as soft and easy to cut as lead†: perhaps mineralogists may be able to point out the country and mine that produce it.

Gold is not an object of more eager desire in Europe, than iron in this part of America, which is another proof of it's scarcity. Every man, it is true, has a little in his possession; but they are so covetous of it, that they leave no means untried to obtain it. On the day of our arrival, we were visited by the chief of the principal village. Before he came on board, he appeared to address a prayer to the sun. He then made a long harangue, which was concluded by a kind of song, by no means disagreeable, and greatly resembling the plain chaunt of our churches. The Indians in his canoe accompanied him, repeating the same air in chords. After this ceremony, they almost all came on board, and danced for an hour to the music of their own voices, in which they are very exact. I gave the chief several presents, which made him so very troublesome, that he daily spent five or six hours on board; and I was obliged to repeat them very frequently, or he would go away discontented, and with an air of threat, which however was not very formidable.

* Copper fused with pure zinc makes pinchbeck or similor; it must be fused with calamine to obtain brass.

Calamine unquestionably contains zinc: but it also contains earth, sand, martial ochre, and often galena. That which has little or no zinc is unfit for making brass.

The semimetal zinc, when impure, may likewise be united with pyrites, lead, blende, and a very hard earthy substance.

Thus it appears, that very different metals will be obtained by fusing copper with pure zinc, and with calamine. (French Editor.)

† This property indicates it to be native or virgin iron. (French Editor.)

As soon as we had taken our station behind the island, almost all the savages of the bay repaired thither. The report of our arrival soon spread through the environs; and several canoes arrived laden with a considerable quantity of otter skins, which the Indians bartered for hatchets, adzes, and bar iron. At first they gave us salmon in exchange for pieces of old hoops; but they soon became more difficult, and would not part with this fish unless for nails, or small implements of iron. I believe the sea-otter is nowhere more common than in this part of America; and I should not be surprised, if a factory, extending its trade only forty or fifty leagues along the coast, were to collect annually ten thousand skins. Mr Rollin, the surgeon of my ship, skinned, dissected, and stuffed the only otter we were able to procure: but unfortunately it was not above four or five months old, and weighed only eight pounds and half. The Astrolabe caught one, which had no doubt escaped from the savages, as it was severely wounded. It appeared to be at the full growth, and weighed at least seventy pounds. Mr de Langle had it flayed to be stuffed; but as it was at the time of our critical situation on entering the bay, it was not executed with care, and we could preserve neither the head nor the jaw.

The sea-otter is an amphibious animal, better known for the beauty of its skin, than by any accurate description. The Indians of Port des Français call it *skecter*; the Russians give it the name of *colry-morsky**, and distinguish the female by the name of *maska*. Some naturalists speak of it under the name of *saricovienne*; but the description given of the *saricovienne* by Mr de Buffon is no way suitable to the sea-otter, which resembles neither the otter of Canada, nor that of Europe.

As soon as we arrived at our second anchorage, we erected our observatory on the island, which was not above a musket-shot from our ships, and formed an establishment there for the time of our stay in port. We pitched tents for our sail-makers and smiths, and made a store for our wa-

* According to Coxe, *bobry morsky*, or sea-beaver; the female, *matka*; the young ones under five months, *medviedki*; &c. (French Editor.)

1786. July. ter-casks, which we completely refitted. As all the Indian villages were on the main-land, we flattered ourselves, that we should be in security on the island, but we were soon convinced of our mistake. Experience had already taught us, that the Indians were great thieves; but we did not suspect them of sufficient activity and perseverance, to carry into execution difficult and tedious schemes. In a short time we learned to know them better. They spent the night in watching for favourable opportunities to rob us: but we kept a strict watch on board our vessels, and they were seldom able to get the better of our vigilance. I had established also the Spartan law: the person robbed was punished; and if the thief received no applause, at least we reclaimed nothing, to avoid all occasion of quarrel, which might have led to fatal consequences. That this extreme mildness rendered them insolent I will not disavow: but I endeavoured to convince them of the superiority of our arms; for which purpose I fired a cannon, to show them, that I could reach them at a distance, and pierced with a musket-ball, in presence of a great number of Indians, several doubles of a cuirass they had sold us, after they had informed us by signs that it was impenetrable to arrows or poignards. Our fowlers, too, who were good marksmen, killed birds over their heads. I am well assured, that they never thought of inspiring us with fear; but their conduct convinced me, that they believed our forbearance inexhaustible. In a very little time they obliged me to remove the establishment on the island. They landed upon it in the night, on the side next the offing; crossed a very thick wood, which it was impossible for us to penetrate in the day; and creeping on their bellies like snakes, almost without stirring a leaf, they contrived to steal some of our effects, in spite of our sentries. They had even the address to enter by night into the tent where M^{esses} de Lauriston and Darbaud, who were on guard at the observatory, slept; and took away a silver-mounted musket, and the clothes of the two officers, which they had taken the precaution to place under their pillow, without being perceived by a guard of twelve men, or even awaking the officers. This theft would have given us little uneasiness, but for the loss of the original paper, containing all our astronomical observations since our arrival at Port des Français.

These circumstances were no impediment to our taking in wood and water. All our officers were continually on duty with the boats, at the head of the different working parties, which we were obliged to send ashore. Their presence, and the order they maintained, were checks upon the savages.

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While we were making speedy preparations for our departure, M^{esrs} de Monneron and Bernizet went in a boat well armed, to take the plan of the bay. I could not send with them any naval officers, because they were all employed; but I had resolved, that the latter should verify the bearings of all the points, and lay down the soundings, before our departure. We intended afterwards to bestow one whole day in hunting bears, of which we had seen traces in the mountains, and then to depart as soon as possible, the advance of the season not allowing us longer delay.

We had already visited the head of the bay, which is perhaps the most extraordinary place in the world. To form an idea of it, it is necessary to conceive a basin of water, unfathomable in the middle, bordered by peaked mountains, of great height, covered with snow, and without one blade of grass to decorate this vast heap of rocks, condemned by nature to eternal sterility. I never beheld the surface of the water ruffled by a single breath of wind. Nothing disturbs it but the fall of enormous masses of ice, which frequently separate from five different glaciers, while the sound is re-echoed by the distant mountains. The air is so calm, and the silence so profound, that the single voice of a man may be heard half a league, as may the cries of a few sea-fowl, which deposit their eggs in the hollows of the rocks. It was at the head of this bay, that we hoped to find channels, by which we might penetrate into the interior of America. We conjectured it might lead to some large river, taking its course between two of the mountains, and originating from one of the great lakes north of Canada. Such was our chimerical notion, and this was its result. We set off in the two barges of the Boussole and Astrolabe. M^{esrs} de Monti, de Marchainville, de Boutervilliers, and father Receveur, accompanied M^r de Langle; and M^{esrs} Dagelet, Boutin, Saint-Ceran, Duché, and Prevost,

1786. were with me. We entered the channel on the west. Prudence required
July. us to keep at a distance from the shore, on account of the falling ice and stones. At length, after having rowed a league and half only, we found the channel terminated at two vast glaciers. We were obliged to push away the flakes of ice with which the sea was covered, to penetrate thus far; and the water was so deep, that I could find no bottom at half a cable's length from the shore with a line of a hundred and twenty fathoms. M^{esses} de Langle, de Monti, and Dagelet, with several other officers, attempted to ascend the glacier. With unspeakable fatigue they advanced two leagues, being obliged at extreme risk to leap over clefts of great depth; but they could only perceive one continued mass of ice and snow, of which the summit of Mount Fairweather must have been the termination.

While they were on this expedition, my boat remained on the shore. A fragment of ice, which fell into the water near half a mile off, occasioned such a swell along the shore, that my boat was upset, and thrown to some distance on the border of the glacier. This accident was soon repaired, and we returned on board, having finished our voyage into the interior of America in a few hours. I had sent M^r de Monneron and M^r Bernizet to explore the eastern channel; which terminated, like this, at two glaciers. Both these channels were surveyed, and laid down in the plan of the bay. (*Charts and Plates, N^o 19.*)

CHAPTER VIII.

Continuation of our Stay at Port des Français—At the Moment of our Departure we experience a dreadful Misfortune—Concise Account of the Particulars of this Event—We return to our first Anchorage—Departure.

THE day after this excursion, the chief came on board better attended, and more ornamented, than usual. After many songs and dances, he offered to sell me the island, on which our observatory was erected; tacitly reserving, no doubt, to himself and the other Indians, the right of robbing us upon it. It was more than questionable, whether this chief were proprietor of a single foot of land: the government of these people is of such a nature, that the country must belong to the whole society; yet, as many of the savages were witnesses to the bargain, I had a right to suppose that it was sanctioned by their assent; and accordingly I accepted the offer of the chief, sufficiently aware, however, that many tribunals would find a flaw in the contract, if ever the nation should think proper to litigate our title, for we could bring no proof, that the witnesses were its representatives, or the chief the actual proprietor of the soil. Be this as it might, I gave him several yards of red cloth, hatchets, adzes, bar iron, and nails, and made presents to all his attendants. The bargain being thus concluded, and the purchase money paid, I sent to take possession of the island with the usual formalities, and buried at the foot of a rock several bronze medals, which had been struck before our departure from France, with a bottle containing an inscription recording our claim.

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The grand work, however, for which we had put into port was accomplished. Our guns were mounted, our hold was restowed, and we had taken on board as ample a stock of wood and water as at our departure from Chili. Not a port in the universe could afford more conveniencies

1786. for accelerating a business often tedious in other countries. Cascades, as I
July. have already said, falling from the summits of the mountains, poured the most limpid water into the casks as they stood in the long-boat: wood, ready felled, lay scattered over a shore, skirted by a sea perfectly smooth. The plan of M^{ESSRS} Monneron and Bernizet was finished, as well as the measure of a base taken by M^r Blondelas, which had served M^r de Langle M^r Dagelet, and most of the officers, to measure the height of the mountains trigonometrically. We had only to regret the loss of M^r Dagelet's paper of observations, and this misfortune was rendered trifling by the different memorandums which had been found. In short we considered ourselves as the most fortunate of navigators, in having arrived at such a distance from Europe without having had a single person sick, and without an individual of either crew being attacked with the scurvy.

But here the greatest of misfortunes, and most impossible to be foreseen, awaited us. It is with the most pungent sorrow I proceed to give the history of a disaster a thousand times more cruel than disease, and all the other events incident to long voyages. But I submit to the severe duty I have imposed upon myself of writing this account; and I am not ashamed to avow, that my sorrow for the event has a hundred times since moistened my cheeks with tears; that time has not effaced my grief; and that every object, every moment, recalls to my remembrance our loss, at a time when we had so little reason to apprehend such a disaster.

I have already observed, that the soundings were to be placed on M^{ESSRS} de Monneron and Bernizet's plan by some of the naval officers. In consequence the Astrolabe's pinnace, under the command of M^r de Marchainville, was ordered for the next day, and I directed mine to be ready, as well as the jolly-boat, the command of which I gave to M^r Boutin. M^r d'Escures, my first lieutenant, a knight of S^t Lewis, went in the Boussole's pinnace, and had the command of the expedition. As his zeal had appeared sometimes a little too ardent, I thought proper to give him instructions in writing. The particulars into which I entered respecting the prudence I required appeared to him so minute, that he asked me whether I took him for a

child, adding, that he had had the command of vessels before now. I explained to him the motives of my orders in a friendly manner: I told him, that M^r de Langle and I had sounded the passage of the bay two days before, and that I found the officer commanding the other boat with us had passed too near the point, and even touched upon it: I added, that young officers thought it a feather in their cap, to mount the parapets of the trenches during a siege, and the same spirit led them in boats to brave rocks and breakers; but such inconsiderate boldness might be attended with the most fatal consequences in an expedition like ours, where such dangers were continually recurring. After this conversation I delivered to him the following instructions, which I read to M^r Boutin, and which will best explain the mission of M^r d'Escures, as well as the precautions I took.

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Written Instructions given to M^r d'Escures by M^r de la Pérouse.

“ Before I enter on the purpose of the expedition on which M^r d'Escures is sent, I must inform him, that he is expressly ordered, not to expose the boats to any danger, and not to approach the passage if there be any breakers. He will set off at six in the morning, with two other boats commanded by M^{esses} de Marchainville and Boutin, and he will sound the bay from the passage to the little cove to the eastward of the two paps. He will lay down the soundings on the plan I have delivered to him, or he will sketch one from which they may be laid down. If there be no breakers in the passage, but merely a swell, as the business is not urgent, he will defer sounding it till some other day, recollecting, that nothing of this kind can be done well, unless it be done with ease. It is probable, that the best time for approaching the passage will be at still water, about half after eight. If circumstances should then be favourable, he will endeavour to measure it's width with a logline, and will place the three boats parallel to each other, sounding in the direction of the width, or from east to west. He will then sound from north to south: but it is scarcely

1786. probable that he can take this second sounding the same tide, as the current
July. will have grown too strong.

“ While waiting for the time of still water, or if the sea should prove rough, M^r d’Escures will sound the interior of the bay, particularly the cove behind the paps, where I am inclined to think there must be very good anchorage. He will also endeavour to fix on the plan the limits of the rocky ground, and of the sand, that the good ground may be known. I conceive that when the channel on the south of the island is open with the point of the paps, there is a good sandy bottom: M^r d’Escures will examine whether my opinion be well founded; but I again repeat, that I must beg him not to deviate from the strictest prudence.”

After instructions like these, could I entertain any apprehension? They were given to a man of thirty-three, who had commanded ships of war: how many reasons therefore had I for security!

Our boats set off according to my directions at six in the morning. It was as much a party of pleasure, as of utility and information. The gentlemen were to shoot, and breakfast under the trees. With M^r d’Escures, I sent M^r de Pierrevert, and M^r de Montarnal, the only relation I had in the navy, and for whom I bore as much affection, as if he had been my son. Never had a young officer given me greater hopes, and M^r de Pierrevert had already acquired what I speedily expected from M^r de Montarnal.

The seven best marines on board composed the boat’s crew, and my chief pilot accompanied them to heave the lead. M^r Boutin had under him in the jolly-boat M^r Mouton, lieutenant of a frigate. I knew that the Astrolabe’s boat was commanded by M^r de Marchainville, but I was not informed whether there were any other officers in it.

At ten in the morning I saw our jolly-boat returning. A little surprised, as I did not expect it so soon, I asked M^r Boutin, before he got on

board, if any thing had happened; apprehending at the moment some attack from the savages. The appearance of M^r Boutin was by no means calculated to allay my fears. His countenance displayed the most lively sorrow. He quickly informed me of the dreadful loss he had witnessed; and in which he must himself have been involved, had not his firmness of mind enabled him to perceive the resources that were left in such extreme peril. Drawn, by following his commanding officer, into the midst of the breakers, which set into the passage, while the sea ran out at the rate of ten or twelve knots an hour, it occurred to him, to present the stern of the boat to the surge, so that yielding to the wave it might not fill, while it would be drifted out stern foremost by the tide. He soon perceived that he had left the breakers a-head, and found himself in the open sea. More intent on the safety of others than of himself, he rowed along the edge of the breakers, in hopes of saving some of his unfortunate comrades, and he even returned into them again, but was driven back by the tide. At length he got upon the shoulders of M^r de Mouton, that he might command a more extensive view: but in vain, all was swallowed up—and M^r Boutin re-entered the bay at still water. The sea having become smooth, he had entertained some hope of the Astrolabe's pinnace, as he had only seen ours go down. M^r de Marchainville was at that time a full quarter of a league from the place of danger, being in as smooth water as in the closest harbour: but this young officer, prompted by a generosity, imprudent no doubt, as, under such circumstances any assistance was impossible, and possessing too much courage and magnanimity to make this reflection when his friends were in such extreme danger, flew to their assistance, rushed into the same breakers, and perished with his commander, the victim of his generosity, and of the peremptory disobedience of that officer's orders.

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M^r de Langle soon came on board my ship, not less overwhelmed with grief than myself, and informed me with tears, that the misfortune was far greater than I had supposed. Since our departure from France, he had made it an inviolable law to himself, never to send the two brothers, M^{esses} la Borde Marchainville and la Borde Boutervilliers, on the same party;

1786. and on this occasion he had yielded for the first time to their wish to take
July. a walk and shoot together, as indeed we both considered this expedition as little more than a party of pleasure, in which the boats would be no more exposed to danger than in Brest Road in fine weather.

Some canoes of the savages came now to inform us of the fatal accident. These rude unpolished men expressed by signs, that they had seen both our boats sink, and that to render them assistance was utterly impossible. We loaded them with presents; and endeavoured to make them understand, that all our wealth would not have been too ample a compensation for him who had saved a single man.

Nothing could be more powerful in awakening their humanity. They hastened to the sea-shore, and spread themselves over both sides of the bay. I had already sent M^r de Clonard with the long-boat to the eastward, where, if any individual had been so fortunate as, contrary to all probability, to save himself, it was likely he would land. M^r de Langle went to the west, that no place might remain unvisited; and I remained on board to take care of the two vessels, with a sufficient number of men to have nothing to fear from the savages, against whom prudence required us to be constantly on our guard. Almost all the officers, and several other persons, accompanied M^{esses} de Langle and Clonard. They proceeded three leagues along the sea-shore, but they saw not the least fragment of the wreck. Still I had retained a gleam of hope. The mind does not easily pass at once from a state of satisfaction to profound grief. But the return of our boats dissipated the illusion, and reduced me to a state of sorrow, which words can but feebly express. I will here give the narrative of M^r Boutin, who was the friend of M^r d'Escures, and forgot, like me, this officer's imprudence.

1786.
July.*Narrative of M^r Boutin.*

“ On the 13th of July, ten minutes before six in the morning, I set off from the Boussole in the jolly-boat, with orders to attend M^r d’Escures, who had the command of our pinnace; and M^r de Marchainville was to join us with the pinnace of the Astrolabe. The instructions given to M^r d’Escures in writing, by M^r de la Pérouse, which had been read to me, directed him to employ the three boats in sounding the bay; to place the soundings, according to the bearings, on the plan given him; and to sound the passage, if the water were smooth, and measure it’s width: but he was expressly charged, not to expose the boats under his command to the least danger, and not to approach the passage, if there were the least appearance of breakers, or even swell. When we had doubled the western point of the island, near which we were anchored, I perceived the passage covered with breakers from one side to the other, and that it was impossible for us to approach it. M^r d’Escures was then a-head, lying on his oars, apparently waiting for me; but when I was within musket-shot of him, he rowed on; this he several times repeated; but his boat rowing faster than mine, I found myself unable to join him. At a quarter after seven, having constantly steered for the passage, we were within two cables length of it, when the pinnace put about, and I followed in her wake. We were then standing towards the bay, leaving the passage astern of us. Our pinnace was a-head of my boat within hail, and that of the Astrolabe a quarter of a league off within the bay. M^r d’Escures then hailed me gaily: ‘I believe we can do nothing better than go to breakfast, for the sea breaks terribly in the passage.’ I answered: ‘I think so too; and I fancy we must content ourselves with fixing the limits of the sandy bay on the larboard of the entrance.’ M^r de Pierrevert, who was with M^r d’Escures, was going to reply to me, but his eyes being turned towards the east, he saw that we were drifting by the ebb. I too

1786. perceived it, and we instantly pulled away with all our might to the north,
July. to get at a distance from the passage, from which we were still at least two hundred yards. I was not apprehensive of the least danger, since, if we could get only forty yards either to the starboard or larboard side, we should at any time have it in our power to run the boats ashore. After having exerted ourselves at our oars for more than a minute, without being able to stem the tide, I endeavoured in vain to gain the east side; and our pinnace, which was a-head, as vainly attempted to gain the west. We were obliged therefore to lay our heads to the north, that we might not fall broadside to the breakers. The beginning of the surge now appeared at a very little distance from my boat. I thought it advisable, therefore, to let go the grapnel, but it would not hold: fortunately it was not made fast to the thwart, and so ran clear out, thus freeing us from a weight which might have been fatal to us. In an instant I was in the midst of the heaviest waves, which almost filled the boat; yet she did not go down, and still answered the helm, so that I was able to keep her stern to the surge, which gave me great hope of escaping the danger.

“ While I was letting go the grapnel, the pinnace increased her distance from me, and did not get into the breakers till some minutes after me. I had lost sight of her when the sea first broke into my boat: but at one of those moments when I was at the top of a wave, I saw her on her broadside sixty or eighty yards a-head, but could perceive neither men nor oars. My sole hope had rested on her stemming the current; for I was too certain that she would be lost if she were carried away by it; since, to escape, required a boat that would swim when full of water, and answer her helm in that situation, to prevent her from upsetting, qualities of which neither, unfortunately, was possessed by our pinnace.

“ I was still in the midst of the breakers, looking round me on all sides; and I perceived, that astern of the boat the waves formed a chain extending to the south as far as I could see. They extended also a considerable way to the west. But I discovered, that, if I could get a hun-

dred yards to the eastward, I should be in a much less dangerous sea. Accordingly I exerted every effort to accomplish this, by pulling to the starboard in the intervals between the seas; and by five and twenty minutes after seven I was out of danger, having to contend with nothing but a heavy swell, and some short waves occasioned by the west-north-west breeze.

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July.

“ After having baled the boat, I thought of assisting my unfortunate comrades; but my hopes were at an end.

“ From the moment I saw our pinnace going down among the breakers, I had pulled by intervals towards the east, but was some minutes before I could extricate myself from them. It was impossible, that persons wrecked in the midst of such a rapid current should get out of it's course, at the mercy of which they must drive the remainder of the tide, which continued to set out of the bay till a quarter before nine: beside, could the most experienced swimmer resist the violence of such waves even for a few moments? Still, as I could make search no where, with any show of reason, except in the direction of the current, I laid the boat's head to the southward, and rowed along the edge of the breakers, which were on my starboard hand, changing my course every moment after objects I perceived floating, which from time to time gave me hopes, but which, on my approach, proved to be nothing but seals or sea-weeds.

“ As there was a heavy swell, when I was on the top of a wave my horizon was pretty extensive, so that I could have perceived an oar, or a piece of wreck, four or five hundred yards distant.

“ My eyes were soon turned towards the eastern point of the entrance, on which I perceived some men making signals by waving their cloaks. These, I afterwards found, were savages: but at the time I supposed them to be the crew of the *Astrolabe's* pinnace, waiting for the slack water to come to our assistance. I was far from thinking, that my unfortunate friends had fallen victims to their generous boldness.

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“ At three quarters after eight o'clock *, the tide being turned, there were no breakers, only a heavy swell. I thought it incumbent on me to continue my search in this swell, following the direction of the ebb, which had ceased; but I was as unsuccessful in this search as in the former. At nine o'clock, perceiving the flood-tide set in from the south-west; having neither provision, sail, nor grapnel; my boat's crew wet and chilled; apprehensive that I should not be able to re-enter the bay when the flood had acquired all it's force; finding, too, that it already flowed strongly to the north-east, which prevented my getting to the south, where my search should have been continued; I returned to the bay, steering to the north.

“ Already the passage was nearly shut in by the eastern point. The sea still broke on each of the points; but it was smooth in the middle. At length I gained the entrance, keeping near the larboard point, on which were the Americans who made the signals, and whom I had taken for Frenchmen. They made signs, that they had seen two boats upset; and, as I could not perceive the *Astrolabe's* pinnace, I was but too certain of the fate of M^r de Marchainville, whom I knew too well to suppose he would reflect on the inutility of the danger to which he must be exposed. Still, however, as we are prone to flatter ourselves, I retained some slight hope, that I should find him on board our ships, whither it was possible he might have gone for assistance: accordingly my first words, when I got alongside, were: ‘ Do you know any thing of M^r de Marchainville?’ and the answer, ‘ No,’ convinced me of his loss.

“ After these particulars, I conceive I ought to explain the motives of the conduct of M^r d'Escures. It is impossible he could ever have thought of entering the passage. His design was merely to approach it; and he imagined he kept himself at a distance more than sufficient to be out of

* Half after eight was the hour I had mentioned in my instructions for approaching the passage without danger, as the current, at all events, would have been setting inward—and by a quarter after seven the boats were lost!

all danger. But in this distance he was deceived, as well as myself, and all the eighteen persons in both the boats. It is not for me to say how far this mistake was pardonable, or why it was impossible to judge of the strength of the current, as I should be thought to be offering my own excuse; for I repeat it, I conceived the distance more than sufficient, and even the sight of the coast, which appeared flying to the north with extreme velocity, only excited my astonishment. Without attempting to particularise all the reasons which contributed to inspire us with so fatal a confidence, I cannot avoid remarking, that, on the day of our entrance into the bay, our boats were above two hours sounding the passage, in every direction, without finding any current. It is true, that, when our ships attempted to enter it, they were driven back by the ebb: but the wind was so faint, that our boats, at the very same time, stemmed the tide with the utmost ease. Lastly, on the 11th of June, when the moon was at the full, our two captains themselves, accompanied by several officers, had sounded the passage, went out with the ebb, returned with the flood, and perceived nothing that could lead them to suspect the least danger*, particularly with boats well manned. Hence it must be inferred, that the violence of the current must have been owing to some particular cause, as an extraordinary melting of snow†, or strong gales of wind, which had not reached into the bay, but unquestionably blew with violence in the offing.

“M^r de Marchainville was a quarter of a league from the passage within the bay, when I was drawn into it. From that time I saw nothing of him; but all who were acquainted with him must know how his noble and generous character would prompt him to act. It is probable, that, when he perceived our two boats in the midst of the breakers, unable to comprehend how we could have been drawn into it, he must have sup-

* Is this consistent with the strictness of the instructions given by M^r de la Pérouse to M^r d'Es-
cures? T.

† This could not have increased the strength of the flood, which is said above to have set in very strong. T.

1786. posed a grapnel rope had snapped, or we had lost our oars, and immediately rowed to the breakers to assist us. Seeing us struggling in the midst of the waves, he would have listened only to the dictates of his natural courage, and come to our succour, at the hazard of perishing with us. Assuredly a glorious death: but how painful to him, who, having escaped the danger, can never hope to behold again his companions, or the heroes who came to save him!

“ I cannot designedly have omitted any essential fact, or misrepresented those I have related: M^r Mouton, who was with me, is here to correct me, if my memory have made any mistake. His firmness, with that of the cockswain and four rowers, contributed not a little to save us. My orders were executed in the midst of the breakers with as much precision, as in the most ordinary circumstances. Signed, BOUTIN.” (*Charts and Plates*, N^o 25.)

Nothing remained for us but to quit with speed a country that had proved so fatal. But we still owed a few days to the families of our unhappy friends: too hasty a departure would have left doubt and anxiety in the minds of people in Europe, who would not have considered, that the current extends only a league without the passage; that neither the boats, nor the people cast away in them, could have been driven farther; and that the fury of the waves in that place left no hope of their return. If, contrary to all probability, any one had been able to return, as it must be in the vicinity of the bay, I resolved to wait some days: but I quitted the anchorage of the island, and took that of the bed of sand, on the west side of the entrance. The moving from one place to the other, though only a league distant, occupied me five days, during which we had a heavy gale of wind from the east, that would have endangered us greatly, had we not been anchored on a good bottom of mud. It was fortunate our anchors did not drive, for we were less than a cable's length from the shore. The contrary winds detained us longer than I intended, so that we could not sail till the 30th of July, eighteen days after the event which it has given me so much pain to re-

late, and the remembrance of which will ever render me unhappy. Before our departure, we erected on the island in the middle of the bay, to which I gave the name of *Isle du Cénotaphe*, or Cenotaph Island, a monument to the memory of our unfortunatè companions; and M^r de Lamanon wrote the following inscription and account, which he buried in a bottle at the foot of the monument.

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July.

“ AT THE ENTRANCE OF THIS HARBOUR PERISHED TWENTY-ONE BRAVE SEAMEN. READER, WHOEVER THOU ART, MINGLE THY TEARS WITH OURS.

“ On the 4th of July, 1786, the frigates la Boussole and l’Astrolabe, which sailed from Brest the 1st of August, 1785, arrived in this port. Owing to the care of M^r de la Pérouse, commander in chief of the expedition; of the viscount de Langle, commander of the Astrolabe; of M^{essrs} de Clo-nard and de Monti, first lieutenants of the two ships; and of the other officers and the surgeons, the crew had experienced none of those diseases which usually attend long voyages. M^r de la Pérouse congratulated himself, as we all did, for having sailed from one end of the world to the other, through dangers of every kind, having visited people reputed barbarians, without losing a single man, or spilling a drop of blood. On the 13th of July, three boats departed at five in the morning, to place the soundings on the plan that had been drawn of the bay. They were commanded by M^r d’Escures, lieutenant of a man of war and knight of S^t Lewis. M^r de la Pérouse had given him written instructions, expressly prohibiting him from approaching the current; but at the moment when he thought himself at a distance from it, he was drawn into it. M^{essrs} de la Borde, two brothers, and M^r de Flaffan, who were in the boat of the second frigate, hesitated not to expose their own lives, to assist their comrades. But, alas! they only shared their fate. The third boat was under the command of M^r Boutin, lieutenant of a man of war. This officer, bravely struggling against the breakers, made vain but useless attempts to assist his friends for some hours, and would have perished likewise, but for the superior construction of his boat, his enlightened prudence, that of M^r Laprise Mouton, lieutenant of a frigate, his second, and the activity and prompt obedience of his crew, consisting of John Marie, cockswain, Lhostis, le Bas, Corentin Jers, and Monens, all four seamen. The Indians appeared to participate in our grief, which is extreme. Affected, but not discouraged, by our misfortune, we departed the 30th of July, to continue our voyage.”

1786. *Names of the officers, seamen, and marines, who were drowned on the 13th*
 July. *of July, a quarter after seven in the morning.*

The BOUSSOLE.

OFFICERS.

Messrs
 d'Escures,
 de Pierrevert,
 de Montarnal,

CREW.

Lemaitre, first pilot.
 Lieutot, corporal and
 cockswain,
 Prieur,
 Fraichot,
 Berrin,
 Bolet,
 Fleury,
 Chaub,

}
 all
 marines, the oldest
 not thirty-three.

The ASTROLABE.

OFFICERS.

Messrs
 de la Borde Marchainville, }
 de la Borde Boutervilliers, } brothers.
 Flasan.

CREW.

Soulas, corporal and cockswain,
 Philiby,
 Juliens le Penn,
 Peter Rabier,

}
 marines.

Thomas Andrieux, }
 Goulvin Tarreau, } captains of the
 William Duquesne, } top, and in the
 flower of their
 age.

Our stay at the entrance of the bay procured us much information respecting the manners and customs of the savages, which it would have been impossible for us to have acquired at the other anchorage. Our vessels were moored near their villages, we visited them several times a day, and every day we had reason to complain of them, though our conduct towards them continued uniformly the same, and we never ceased to give them proofs of gentleness and good-will.

On the 22d of July they brought us part of the wreck of our boats, which had been driven on the eastern shore, very near the bay, and informed us by signs, that they had interred the body of one of our unfortunate companions on the strand, where it had been thrown up by the waves. In consequence of this information Messrs de Clonard, de Monneron and de Monti, immediately set off, and directed their course

towards the east, accompanied by the savages who had brought us the pieces of wreck, and whom we had loaded with presents. 1786.
July,

Our officers walked seven or eight miles over the stones, in a miserable road, while every half hour the guides demanded a fresh payment, or refused to proceed; and at length they stole into the wood, and made their escape. The officers discovered too late, that their report was a mere trick, framed to obtain presents. In this walk they saw vast forests of firs, of such noble dimensions, that some which they measured were five feet in diameter, and appeared to be upwards of a hundred and forty feet high.

We were not surprised at the account they gave us of the stratagem of the savages, who in knavery and theft were unparalleled. M^{esses} de Langle and de Lamanon, with several other officers and naturalists, had made an excursion two days before to the westward, for a similar melancholy purpose, and with no better success; but they discovered an Indian village on the banks of a small river, which was staked quite across for the salmon fishery. We had long suspected that this fish came from that part of the coast, but we were not certain of it, till this adventure satisfied our curiosity. M^r Duché de Vancy made a drawing, which will explain the particulars of this fishery *. In this it will be seen, that the salmon, coming up the river, are stopped by the stakes: unable to leap over them, they turn back towards the sea; in the angles of the dike are placed very narrow wicker baskets, closed at one end, into which they enter, and being unable to turn in them, they are thus caught. This fishery is so abundant, that the crews of both vessels had plenty of salmon during our stay, and each ship salted two casks.

Our travellers saw likewise a morai †, from which they learned, that these Indians were accustomed to burn the bodies of the deceased, and preserve the head. They found one wrapped in several skins. This mo-

* This drawing is not come to hand. (French Editor.)

† I have retained the name *morai*, because it is more suitable than tomb to convey the idea of an exposure to the open air.

1786. nument consists of four tolerably strong posts, supporting a little chamber
July. of planks, in which are repositied the ashes of the dead, enclosed in chests. They opened the chest, unfolded the skins in which the head was wrapped, and, having satisfied their curiosity, replaced every thing with scrupulous exactness, adding presents of iron instruments and beads. The savages, who witnessed this visit, showed a little uneasiness; but they did not fail to take away the presents left by our travellers without delay. Some others of us, going to the place the next day out of curiosity, found only the ashes and the head. They placed there some fresh presents, which experienced the same fate as those of the preceding day. I am convinced the Indians would have been pleased, had we repeated our visits several times a day. But if they allowed us, though with a little repugnance, to visit their tombs, it was not the same with their huts, which they would not permit us to approach, till they had sent away their wives, who are the most disgusting beings in the universe.

Every day we saw fresh canoes enter the bay; and every day whole villages departed, and gave place to others. These Indians seemed to have considerable dread of the passage, and never ventured to approach it, unless at the slack water of flood or ebb. By the help of our glasses we distinctly perceived, that, when they were between the two points, the chief, or at least the principal Indian, arose, stretched out his arms towards the sun, to which he appeared to address a prayer, while the rest paddled away with all their strength. In the course of our inquiries respecting this custom, we learned, that seven very large canoes had lately been lost in this passage, while an eighth escaped. This the Indians who were saved consecrated to their god, or to the memory of their comrades. We saw it by the side of a morai, which no doubt contained the ashes of some who were shipwrecked.

This canoe did not resemble those of the country, which are formed only of the trunk of a tree, hollowed out, and heightened on each side by a plank, sewed to the bottom of the canoe. This had timbers and wales like our boats; and the frame, which was well made, had a covering of

seal-skins, which served instead of planks, sewed together with such nicety, that the best workmen in Europe would find it difficult to imitate. This covering, which we measured with great care, was repositied in the morai, by the side of the coffers of ashes; and the frame of the canoe remained naked near it, raised upon stocks.

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July.

I could have wished to have brought this covering to Europe, which might easily have been done, as no Indian could have opposed it, this part of the bay being uninhabited. Beside, I am well persuaded, that the persons shipwrecked were strangers: my conjectures on which head I shall give in the following chapter. But a religious respect for the asylums of the dead is universal, and I was willing that this should remain inviolate.

At length, on the 30th of July, at four in the afternoon, we got under way with a very faint breeze from the west, which held us till we were three leagues from the land. The horizon was so clear, that we perceived and set Mount St Elias, bearing true north-west, distant at least forty leagues. At eight in the evening the entrance of the bay bore north, three leagues distant, and by the lead we were in ninety fathoms water, muddy bottom.

30.

CHAPTER IX.

Description of Port des Français—It's latitude and longitude—Advantages and Disadvantages of this Harbour—It's Vegetable and Mineral Productions—Birds, Fishes, Shells, and Quadrupedes—Manners and Customs of the Indians—Their Arts, Weapons, Dress, and Inclination to Theft—Strong Reasons to presume, that the Russians alone have an indirect Communication with these People—Their Music, Dancing, and Passion for Gaming—Dissertation on their Language.

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July.

THE bay, or rather harbour, to which I have given the name of Port des Français, is situate, according to our observations and those of M^r Dagelet, in $58^{\circ} 37'$ north latitude, and $139^{\circ} 50'$ west longitude. The variation of the compass is 28° east, and the dip 74° . The plan of the harbour will exhibit it's extent and figure, better than any description. At new and full moon the tide rises seven feet and half, and it is high-water at one o'clock. The winds in the offing, or perhaps other causes, act so powerfully on the current of the passage, that I have seen the flood tide set in like the most rapid river, while, under different circumstances, though at the very same age of the moon, it might be stemmed by a boat. In my different excursions I have found, that the tide sometimes rises fifteen feet above the level of the sea. This is probably in the winter. When the wind blows strong any way from the south, the entrance of the harbour must be impassable; and at all times it must be difficult from the currents. To get out of it, likewise, requires a combination of circumstances, the want of which may detain a vessel some weeks. A ship can sail only at the moment of high water: the breeze from the west or north-west frequently does not begin to blow till near eleven o'clock, so that you cannot avail yourself of the morning tide: the easterly winds, which are

contrary, appear to me more frequent than the westerly : and the height of the adjacent mountains never allows the north or land wind to be felt in the road. As this harbour affords great advantages, I have thought it incumbent on me to expose it's inconveniences also. It appears to me ill-calculated for vessels fitted out on a trading voyage for furs. These should anchor in many bays, and make but a short stay ; because the Indians will have disposed of their whole stock in a week, and every loss of time is very detrimental to the interests of the owners. But a nation intending to establish a factory on this coast, like that of the English at Hudson's Bay, could not choose a more suitable place. A single battery of four heavy guns, erected on the point of the continent, would be sufficient to defend such a narrow entrance, rendered so difficult by the currents : and this battery could neither be turned nor taken by land, because the sea breaks violently on the coast, so that a landing on it is impracticable. The fort, magazines, and all the buildings for commercial purposes, should be erected on Cenotaph Island, which is nearly a league in circumference, capable of being cultivated, and affords both wood and water. The vessels not having to seek for a cargo, which they would be certain of finding collected on a single spot, would be exposed to no danger. A few buoys, to point out the interior navigation of the bay, would render it extremely safe and easy. Pilots would be formed, who, knowing better than we the direction and velocity of the current, at certain times of the tide, would facilitate the going in and out of vessels. And lastly, our trade in otter-skins was so considerable, that I do not think a greater quantity can be collected in any part of America.

The climate on this coast appears to me infinitely more mild than that of Hudson's Bay in the same latitude. We measured pines that were six feet in diameter, and a hundred and forty feet high ; while those of the same species at Prince of Wales's Fort and Fort York are scarcely big enough for studding-sail booms.

Vegetation here, during three or four months of the year, is very vigorous.

1786.
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1786. rous. I should be little surprised to see Russian wheat, and a great number of common plants succeed. We found abundance of celery, round-leaved sorrel, lupines, wild pease, yarrow, succory, and bastard fox-glove (*mimulus*). Every day, and every meal, the ship's copper was filled with these herbs. We ate of them in soups, ragouts, and sallads: and they contributed not a little to the preservation of our health. Among these pot-herbs we saw almost all that are common in the meadows and mountains of France: angelica, marigolds (*bouton d'or*), violets, and several species of grass proper for fodder. All these herbs might have been boiled and eaten without danger, had they not been mingled with a very rank *cicuta*, on which we had made no experiments.

The woods are full of raspberries, strawberries, and gooseberries. There are found in them also the elder tree, dwarf willow, different species of heath that grow in the shade, the Carolina poplar-tree, the *tacamahaca* (*peuplier-liard*), the willow (*saule-mar saut*), the horn-beam, and those lofty pines, which would be fit for masts for our largest ships. No vegetable production of this country is unknown in Europe. Mr de la Martinière met with only three plants which he thought new; and a botanist might do as much as this in the vicinity of Paris.

The rivers abounded with trout and salmon; but in the bay we caught nothing but halibut (*fletans* *), some of them weighing upward of a hundred pounds, small ling (*vieilles* †), one single thornback (*caplans* ‡), and a few plaice. As we preferred to any of these salmon and trout, of which the Indians sold us more than we could consume, we employed ourselves very little in fishing, and that only with the hook and line. Indeed our

* Or *faitans*, a flat fish, longer and less square than the turbot, the skin of which is covered with small scales on the upper part. Those that are caught in Europe are much smaller. (French Editor.)

† A fish resembling the cod in taste and appearance, but usually larger, and as easy to be taken on account of its greediness. (French Editor.)

‡ This fish resembles the whiting, though a little larger. It is tender, well-flavoured, and easy of digestion. It abounds on the coasts of Provence, where it is known by the name of *capelan*, or poor priest. (French Editor.)

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occupations never allowed us to shoot the seine net, which would have required five and twenty or thirty men to haul it ashore. Muscles lie in heaps on the part of the shore which is dry at low water, and the rocks are studded with small and tolerably curious limpets. Different sorts of whelks and other sea-snails also are found in the hollows of the rocks. I saw on the sand of the shore pretty large kima cockles, and M^r de Lamanon brought from a place more than two hundred toises above the level of the sea petrifications of the shell known to conchologists by the name of *royal cloak*, and more commonly *S^t James's shell*, of the largest size, and in very good preservation. This fact is nothing new to the naturalist, who may have found them at far greater heights; but I am persuaded it will long be difficult to account for it in a satisfactory manner. We did not find a single shell of this kind thrown upon the shore, which is indisputably nature's cabinet.

Our sportsmen saw bears, martens, and squirrels, in the woods; and the Indians sold us skins of black and brown bears, the Canadian lynx, ermine, marten, squirrel, gray squirrel, beaver, Canadian marmot, or monax, and red fox. M^r de Lamanon also caught a water-rat alive. We saw elk skins tanned, and a horn of a wild goat: but the most valuable and common furs are those of the sea otter, sea bear, and wolf. We found birds in sufficient number, but no great variety. The coppices were full of sparrows, nightingales, blackbirds, and yellowhammers. It was their season of love, and to me their song was very delightful. We saw the white-headed eagle and the raven sailing through the air; we surprised and killed a kingfisher; and we observed a very beautiful blue jay, with some humming-birds. The swallow and black oyster-catcher make their nests in the hollows of the rocks on the sea-shore. The gull, the redfooted guillemot, and the cormorant, with some ducks and divers of the large and small species, were the only water-fowl we perceived.

But if this country resemble many others in its animal and vegetable productions, its aspect is very different, and I doubt whether the profound valleys of the Alps and Pyrenees exhibit a picture equally terrific, and at

1786. the same time so picturesque, as to be well worth visiting by the curious,
July. were it not at one of the extremities of the world.

The primitive mountains of granite or schistus, covered with eternal snow, on which neither tree, nor plant, is to be seen, have their base in the water, and form a kind of quay on the shore. Their acclivity is so steep, that even the wild goats cannot ascend higher than five or six hundred yards; and all the gullies that separate them are vast glaciers, the summits of which cannot be seen, while their bases are washed by the sea. At a cable's length from the shore we could find no bottom with a line of a hundred and sixty fathoms.

The sides of the harbour are formed by secondary mountains, not more than eight or nine hundred toises in height. These are covered with pines, carpeted with verdure, and merely capped with snow. To me they appeared to be composed entirely of schistus, in a state of incipient decomposition. They are not inaccessible, though very difficult to ascend. Messrs de Lamanon, de la Martinière, Collignon, abbé Mongès, and father Receveur, those ardent and indefatigable naturalists, could not reach their summits, though they ascended a considerable height with unspeakable fatigue. Not a stone, nor a pebble, escaped their search. Too skilful naturalists not to be aware, that specimens of every fossil that constitutes the bulk of a mountain are to be found in the adjacent valleys, they collected ochre, cupreous pyrites, friable but very large and perfectly crystallized garnets, crystals of schœrl, granite, schisti, hornstone, very pure quartz, mica, plumbago, and fossil coral. Some of these indicate, that the mountains enclose ores of iron and copper, but we perceived no trace of any other metal.

For a country so frightful, nature provides inhabitants differing as widely from civilized nations, as the land I have described from our cultivated plains. Rude and barbarous, as their soil is wild and rugged, they inhabit the country only to extirpate every thing that lives and moves upon it. At war with every animal, they despise the vegetables that spring up around

them. I have seen women and children eat a few raspberries and strawberries: but these are no doubt insipid to the palates of men, who are precisely on the earth what the vulture is in the air, or the wolf and the tiger in the forest*.

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Their arts are considerably advanced, and their civilisation in this respect has made great progress; but in every thing that polishes and softens the ferocity of manners, they are yet in their infancy. The manner in which they live, excluding every kind of subordination, renders them continually agitated by vengeance or fear. Cholerick and prompt to take offence, I have seen them continually with the poignard unsheathed against each other. Exposed to perish with hunger in the winter, when the chase cannot be very productive, they live in the summer in the greatest abundance, as they can catch more fish in an hour than is sufficient for their family. The rest of the day they remain idle, spending it in gaming, of which they are as passionately fond as some of the inhabitants of our large cities. This is the grand source of their quarrels: and I do not hesitate to pronounce, that this tribe would be completely exterminated, if the use of any intoxicating liquor were added to these destructive vices.

Philosophers may exclaim against this picture if they please. They may write books by their fire-sides, while I have been voyaging for thirty years. I have been witness to the knavery and injustice of these people, whom they depict as good, because they are so little removed from a state of nature; but this nature is sublime only in the great, in the minutiae of things it is negligent. It is impossible to penetrate woods not thinned by the hand of civilized man; to traverse plains filled with stones and rocks,

* An old proverb puts credulity on it's guard against the narratives of travellers. This prejudice might weaken the confidence of certain readers, who do not reflect on the regard a navigator would pay to his fame, and that his least deviation from truth might draw formal impeachments of his veracity from the numerous witnesses by whom he was accompanied. If, however, the reader cannot suppress that sentiment which excludes reflection, I only request him, in order to satisfy himself, to consult what Dixon has said on the north-western coast of America; bearing in mind, that the English navigator made this voyage the year after la Pérouse, and could know nothing of his journal. (French Editor.)

1786. and deluged with impassable morasses; and to associate with the man of
July. nature, because he is savage, deceitful, and malicious: Confirmed in this opinion by melancholy experience, I have not thought it my duty, however, to employ the force with which I was entrusted, to repel the injustice of these savages, and teach them, that there is a law of nations, which is never to be violated with impunity.

Some of the Indians were continually about our ships in their canoes, and spent three or four hours before they began to barter a little fish, or two or three otter-skins, taking every opportunity to rob us, catching at every bit of iron that could easily be carried off, and examining particularly in what way they could deceive our vigilance during the night. I made the principal persons come on board my vessel, and loaded them with presents; yet these very men, whom I so particularly distinguished, never disdained to steal a nail or an old pair of breeches. Whenever they assumed a smiling and cheerful air, I was sure they had stolen something, though I very often pretended not to see it.

I had particularly recommended caressing the children, and gratifying them with little presents. The parents were insensible to this mark of kindness, which I thought must be felt in every country: the only reflection it excited in their minds was, that, by asking to accompany their children, they would have an opportunity of robbing us; and for my own information I several times procured myself the pleasure of seeing the father avail himself of the moment when our attention appeared most engaged by his child, to hide under his garment of skin whatever was within his reach.

I sometimes assumed an appearance of wishing for trifles of little value belonging to Indians whom I had just loaded with presents; but I always made this trial of their generosity in vain.

I will admit, if you please, that it is impossible for a society to exist without some virtues; but I am forced to confess, that here I could not per-

ceive any. Always quarrelling among themselves, indifferent to their children, absolute tyrants to their wives, who are incessantly condemned to the most laborious occupations, I observed nothing among these people to mellow the tints of the picture.

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We never landed except in force, and armed. They greatly dreaded our muskets, and eight or ten Europeans together were sufficient to awe a whole village. Our two surgeons being so imprudent as to go a shooting alone were attacked. The Indians endeavoured to snatch their fowling-pieces from them, but could not succeed: two men being sufficiently formidable to them, to make them retire. The same thing happened to M^r de Lesseps, the young Russian interpreter; but fortunately the crew of one of our boats came to his assistance. These acts of hostility appeared to them so natural, that they did not desist from coming on board, and never suspected the possibility of our making reprisals*.

I have given the appellation of village to three or four sheds of wood, twenty-five feet long, by fifteen or twenty wide, and closed with planks or bark of trees only on the side exposed to the wind. In the middle was a fire, over which hung salmon and halibut drying in the smoke. Eighteen or twenty persons lodged under each of these sheds, the women and children on one side, and the men on the other. It appeared to me, that each hut contained a small tribe unconnected with it's neighbours; for each had it's canoe, and a sort of chief; each departed, left the bay, and took away it's fish and it's planks, without the rest of the village appearing to take the least concern in the business.

I think I may venture to affirm, that this place is inhabited only in the summer, and that the Indians never pass the winter here. I did not see a single hut, that afforded shelter from the rain; and though there were never

* In the lines of this picture the reader will trace the painful impression of the recent loss, which was related in the preceding chapter. As all accounts agree, however, respecting the principal facts, from which even anthropophagy must not be expunged, I thought it right not to soften any thing, as the whole bears the stamp of a sensibility honourable to it's author. (French Editor.)

1786. three hundred Indians collected in the bay at one time, we were visited by
July. seven or eight hundred others.

Canoes were coming in and going out continually, and each brought or carried away it's house, and it's furniture, which consisted in several little coffers containing their most valuable effects. These coffers are placed at the entrance of their huts, which are so filthy and stinking, that the den of no known animal can be compared to them. They never go two steps distant to obey the calls of nature, of which they make no mystery, and for which they seek no shade; continuing the conversation in which they were engaged, as if they had not a moment to lose; and if it happen at meal-time, they quickly resume their place, from which they do not retire even a couple of yards*. The wooden vessels, in which they cook their fish, are never washed. They serve for kettles, dishes, and plates: and as they cannot be set over the fire, they make the water boil in them with red-hot pebbles, which they renew till their food is sufficiently dressed. They are also acquainted with the art of roasting, which they perform in the same manner as our soldiers in camp. It is probable, that we saw but a very small part of these people, who in all likelihood occupy a considerable space along the sea-shore; visiting in summer the different bays in search of food like the seals, and in winter retiring farther within the land, to hunt beavers and other animals of which they brought us the spoils. Though they go barefoot, the soles of their feet are not callous, and they cannot walk over stones; which proves, that they travel only in canoes, or on the snow with snow-shoes.

* "The inside of these dwellings exhibits a complete picture of dirt and filth, indolence and laziness; in one corner are thrown the bones, and remaining fragments of victuals left at their meals, in another are heaps of fish, pieces of stinking flesh, grease, oil, &c." Dixon's Voyage, p. 173.

Cook describes the filthiness of the insides of the houses of the inhabitants of Nootka Sound in the following words. "The nastiness and stench of their houses are, however, at least equal to the confusion. For, as they dry their fish within doors, they also gut them there, which, with their bones and fragments thrown down at meals, and the addition of other sorts of filth, lie every where in heaps, and are, I believe, never carried away, till it becomes troublesome, from their size, to walk over them: in a word, their houses are as filthy as hog-sties; every thing in and about them stinking of fish, train-oil, and smoke." Cook's third Voyage, Vol. II. Page 316. (French Editor.)

Dogs are the only animals with which they have formed any alliance. Of these each hut has commonly three or four. They are small; resemble the shepherd's dog of Buffon; scarcely ever bark, but make a whistling noise much like that of the jackal of the Carnatic*; and are so savage, that they seem to be to other dogs what their masters are to civilised people.

The men of this country bore holes through the cartilages of the nose and ears, and append to them different little ornaments. They make scars on the arms and breast with a very keen iron instrument, which they sharpen by rubbing it on their teeth as on a whetstone. Their teeth are filed down to the gums, by means of a rounded piece of sandstone in the shape of a tongue. Ochre, lamp-black, and plumbago, mixed with seal oil, are employed by them to paint the face and the rest of the body, which has a frightful appearance. On occasions of high ceremony, they wear their hair long, braided, and powdered with the down of sea-fowl. This is the height of their luxury, and perhaps engrossed by the heads of families. A simple skin is thrown over their shoulders, and the rest of the body is left naked, except the head, which they commonly cover with a little straw hat, curiously woven; though sometimes they wear on their heads caps with two horns, eagle's feathers, and entire heads of bears fitted on a skull-cap of wood. These kinds of head-dresses are greatly diversified, but their principal object, like that of most of their customs, is to render them frightful, perhaps to awe their enemies.

Some of the Indians had complete shirts of otter-skins; and the common dress of the grand chief was a shirt of tanned elk-skin, bordered with a fringe of deer's hoofs and beaks of birds, the jingling of which when he danced was not unlike that of sheep's bells. This dress is well known to

* A wild, carnivorous, and dangerous animal, common in Asia, related to the wolf and the dog. It barks by night like the dog, but not so loud. Its skin is yellowish, and makes a handsome fur. (French Editor.)

1786. the savages of Canada, and to other nations which inhabit the eastern parts
July. of America *.

I saw no appearance of tatooing, except on the arms of some of the women. These, however, have a custom, which renders them hideous, and which I could hardly have believed, had I not seen it. All without exception have the lower lip slit close to the gum the whole width of the mouth, and wear in it a kind of wooden bowl without handles, which rests against the gum, and which the slit lip serves as a collar to confine, so that the lower part of the mouth projects two or three inches †. The

* "The chief (who always conducts the vocal concert) puts on a large coat, made of the elk skin, tanned, round the lower part of which is one, or sometimes two rows of dried berries, or the beaks of birds, which make a rattling noise whenever he moves." Dixon's Voyage, p. 242. (French Editor.)

† This custom appears to be general among the tribes that inhabit the north-western coast of America, from the latitude of 50° to 61°. It even extends to the savages of the Fox and Aleutian Islands. See what Coxe says in his Account of Russian Discoveries.

At Port Mulgrave, in latitude 59° 33' north, and longitude 142° 20' west of Paris,

"An aperture is made in the thick part of the under lip, and increased by degrees in a line parallel with the mouth, and equally long: in this aperture, a piece of wood is constantly wore, of an elliptical form, about half an inch thick; the superficies not flat, but hollowed out on each side like a spoon, though not quite so deep; the edges are likewise hollowed in the form of a pulley, in order to fix this precious ornament more firmly in the lip, which by this means is frequently extended at least three inches horizontally, and consequently distorts every feature in the lower part of the face. This curious piece of wood is wore only by the women, and seems to be considered as a mark of distinction, it not being wore by all indiscriminately, but only those who appeared in a superior station to the rest." Dixon's Voyage, p. 172.

At Norfolk Sound, in latitude 57° 3' north, longitude 137° 5' west of Paris,

"The women, too, ornament, or rather distort their lips in the same manner as I have already described; and it should seem, that the female who is ornamented with the largest piece of wood, is generally most respected by her friends, and by the community in general." *Ib.* p. 186.

Speaking of the island of Hippah, one of the Queen Charlotte's islands, in latitude 53° 48' north, longitude 135° 20' west of Paris, the same gentleman says:

"There were likewise a few women amongst them, who all seemed pretty well advanced in years; their under lips were distorted in the same manner as those of the women at Port Mulgrave and Norfolk Sound, and the pieces of wood were particularly large. One of these lip-pieces appearing to be peculiarly ornamented, captain Dixon wished to purchase it, and offered the old woman to whom it belonged a hatchet; but this she refused with contempt; toys, basons, and several other articles were

drawing made by M^r Duché de Vancy, which is extremely accurate, will render more plain than any description this custom, the most disgusting perhaps that exists upon the face of the earth. (*See Charts and Plates, N^o 23 and 24.*) The young girls wear only a needle in the lower lip: the married women alone have a right to the bowl*. We sometimes prevailed on them to lay aside this ornament; but it was with difficulty; and they made the same gestures, and testified the same embarrassment, as an European woman on discovering her bosom. The lower lip dropped on the chin, when the piece of wood was removed, and this second exhibition was scarcely more agreeable than the first.

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These women, the most disgusting in the world, covered with stinking hides, often not even tanned, were still capable of exciting desire in the

afterwards shown to her, and as constantly rejected. Our captain began now to despair of making his wished-for purchase, and had nearly given it up, when one of our people happening to show the old lady a few buttons, which looked remarkably bright, she eagerly embraced the offer, and was now altogether as ready to part with her wooden ornament as before she was desirous of keeping it. This curious lip-piece measured three and seven-eighth inches long, and two and five-eighth inches in the widest part: it was inlaid with a small pearly shell, round which was a rim of copper." *Ib.* p. 208.

We may also compare what Cook says of the customs of the savages of Oonalashka; of Norton's Sound, in latitude 64° 31' north, and longitude 165° 7' west of Paris; and of Prince William's Sound, in latitude 61° 11' 30" north, longitude 148° 52' west of Paris; in his third Voyage, Vol. III. (French Editor.)

* As marriage among savages can be subject to no formalities but those prescribed by nature, I think, with Dixon, that the bowl is rather a sign of puberty, or motherhood, than a mark of dignity, or of the woman being the exclusive property of one man. This may be the principle, on which the respect paid to those who are decorated with it is founded; for I do not suppose, that the being deprived of this honour can be any punishment in a country so little civilised, particularly as it would be very easy to know those again who had enjoyed it.

"This curious operation of cutting the under lip of the females never takes place during their infancy, but, from every observation I was able to make, seems confined to a peculiar period of life. When the girls arrive to the age of fourteen or fifteen, the centre of the under lip, in the thick part near the mouth, is simply perforated, and a piece of copper wire introduced to prevent the aperture from closing; the aperture afterwards is lengthened, from time to time, in a line parallel with the mouth, and the wooden ornaments are enlarged in proportion, till they are frequently increased to three, or even four inches in length, and nearly as wide, but this generally happens, when the matron is advanced in years, and consequently the muscles are relaxed; so that possibly old-age may obtain greater respect than this very singular ornament." Dixon's Voyage, p. 187. (French Editor.)

1786. breasts of some persons, not of the most delicate taste. At first they
 July. raised difficulties, and declared, by signs, that they should hazard the loss of their lives: but when they were overcome by presents, they wished the sun to be witness of their actions, and refused to retire into the woods*. No doubt the sun is the god of these people; they frequently address prayers to him; but I saw neither temple, nor priest, nor trace of regular worship.

The stature of these Indians is much the same as ours. Their features vary considerably, and exhibit no peculiar characteristic marks except in the expression of their eyes, to which gentleness is an utter stranger. The colour of their skin is very brown, because it is incessantly exposed to the air: but their children are born as fair as ours. They have, it is true, less beard than Europeans, but sufficient to render it impossible to be questioned; and to suppose all the Americans beardless is an error, that has been too lightly adopted. I have seen the natives of New England, Canada, Nova Scotia, and Hudson's Bay, and I have found among them all several individuals with beards, which induced me to believe, that the rest

* In general the particulars of Dixon's narrative agree so well with the account of la Pérouse, that I can scarcely conceive the reason of their difference in appreciating the charms of the female sex. Did chance present to Dixon an object single in her kind? Or was the difference owing merely to the known warmth of imagination of a seaman, particularly after a long voyage? Be this as it may, the following are his words:

"They are particularly fond of painting their faces with a variety of colours, so that it is no easy matter to discover their real complexion; however, we prevailed on one woman, by persuasion, and a trifling present, to wash her face and hands, and the alteration it made in her appearance absolutely surprised us; her countenance had all the cheerful glow of an English milk-maid; and the healthy red which flushed her cheek, was even *beautifully* contrasted with the whiteness of her neck; her eyes were black and sparkling; her eye-brows the same colour, and most beautifully arched; her forehead so remarkably clear, that the translucent veins were seen meandering even in their minutest branches: in short, she was what would be reckoned handsome even in England: but this symmetry of features is entirely destroyed by a custom extremely singular, &c." Dixon's Voyage, p. 171.

In support of what Dixon says, however, I ought to quote the Spanish account of a voyage in 1777, written by Don Maurelle, second captain of the frigate la Favorita. This navigator, having spoken of the custom of wearing the ridiculous ornament in a hole in the middle of the under lip, adds: "were they better dressed, many might dispute the prize of beauty with the handsomest of our women in Spain." (French Editor.)

are accustomed to eradicate the hair *. The frame of their body is slight. The weakest of our seamen would have thrown the strongest of the Indians in wrestling. I saw some whose swelled legs seemed to indicate the scurvy, though their gums were sound. I suspect they never arrive at any very old age; I saw but one woman that appeared to be sixty; and she enjoyed no privileges, but was obliged, like the rest, to submit to the various labours imposed on her sex.

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My voyages having enabled me to compare the different nations, I can affirm, that the Indians of Port des Français are not Esquimaux, but have evidently one common origin with all the inhabitants of the interior part of Canada and North America.

Customs altogether different, and a very peculiar physiognomy, distinguish the Esquimaux from the other Americans. They inhabit the coast of Labrador, Hudson's Strait, and a strip of land reaching quite across America as far as the peninsula of Alashka; and appear to me to resemble the Greenlanders. It is very doubtful, however, whether either Asia or Greenland were the original country of these people: an idle question, and

* "The young men have no beards, and I was at first inclined to think that this arose from a natural want of hair on that part, but I was soon undeceived in this particular; for all the men we saw, who were advanced in years, had beards all over the chin, and some of them whiskers on each side the upper lip.

"As this supposed defect amongst the natives of America has occasioned much speculative enquiry amongst the learned and ingenious, I took every opportunity of learning how it was occasioned, and was given to understand, that the young men got rid of their beards by plucking them out, but as they advance in years, the hair is suffered to grow." Dixon's Voyage, p. 238.

An enemy to all system, and truth being uniformly the object of my inquiries, I will never suppress assertions contradictory to those of la Pérouse. Thus I am persuaded the reader will be gratified by the following extract from count Carli's American Letters.

"Certainly it is no way surprising to see the Americans without hair on the body, or the chin, since the Chinese and Tartars are equally destitute of it, if we may credit the unanimous report of historians. Hippocrates informs us, that the Scythians, in his time, had likewise no beard, and no hair on the body. The Huns probably descended from these Scythians, since Jornandes tells us, that they grew old without a beard, after having attained the age of puberty without the ornament of manhood. The history of Hyton the Armenian, who escaped from Tartary in 1305, and turned monk in Cyprus, relates, that the Tartars, particularly those of Cathay, had no beard. How many people are there in Asia and in Africa similarly circumstanced!" Lett. xxiv. (French Editor.)

1786. incapable of ever being solved in a manner to admit of no dispute. Suffice
 July. it, that the Esquimaux are a nation of fishermen rather than of hunters, preferring oil to blood, and perhaps to every thing else, and very commonly eating their fish raw. Their canoes are uniformly covered with seal-skins stretched very tight. They are so dexterous in the water, that they may be considered almost as amphibious animals, and even the seal himself can scarcely claim it more as his proper element. Their faces are square; their eyes, and their feet, small; their chest, broad; their stature, short. No one of these characteristics is applicable to the indigenous inhabitants of Port des Français; who are much taller, thin, and not at all robust; and who are very unskilful in the construction of their canoes, which are formed of a trunk of a tree hollowed out, and heightened on each side by a plank.

They fish, as we do, by staking rivers across, or with the hook and line. Their mode of angling is very ingenious. Each line is fastened to a large seal's bladder, and set adrift. One canoe has twelve or fifteen of them. When a fish is caught, he drags along the bladder, and the canoe rows after it. Thus a couple of men can attend twelve or fifteen lines, without the trouble of holding them in the hand*.

These Indians have made much greater progress in arts than in morals, and their industry is farther advanced than that of the inhabitants of the South-sea islands. I except agriculture, however, which, giving man a fixed habitation, securing him subsistence, and exciting in his mind the fear of seeing the earth he has planted laid waste, is perhaps of all means the most efficacious to soften his manners, and render him a social being.

The Americans of Port des Français know how to forge iron, fashion copper, spin the hair of divers animals, and form with the needle, of the

* " ——— the success of their fishery, which is conducted in a very singular manner. They bait their hook with a kind of fish, called by the sailors *squids*, and having sunk it to the bottom, they fix a bladder to the end of the line as a buoy, and should that not watch sufficiently, they add another. Their lines are very strong, being made of the sinews or intestines of animals. One man is sufficient to look after five or six of these buoys, &c." Dixon's Voyage, p. 174. (French Editor.)

It appears from Sir G. Staunton's account, that the same method of fishing is practised in China. T.

thread thus procured, a stuff not unlike to French tapestry. They intermingle with this slips of otter-skin, which gives their cloaks a resemblance of the finest silk plush. Hats and baskets of rushes are no where woven with more skill; and they ornament them with pleasing figures. They likewise carve all sorts of figures of men and animals, in wood or stone, in a very tolerable manner; make boxes of a tolerably elegant form, and inlay them with the opercula of shells; and cut serpentine into ornaments, giving it the polish of marble.

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Their weapons are the poignard I have already described, a lance of wood hardened by the fire, or pointed with iron, according to the wealth of the owner; and a bow and arrows. The arrows are commonly headed with copper; but the bow has nothing particular, and is much weaker than those of many other nations.

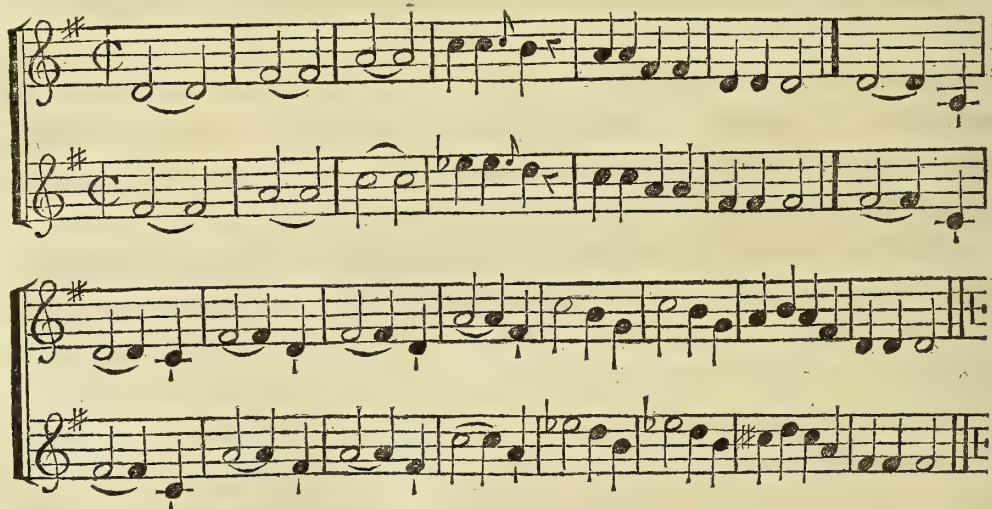
Among their trinkets I found pieces of yellow amber: but whether it be a production of their country, or procured, like their iron, from the ancient continent, by an indirect intercourse with the Russians, I am ignorant.

I have already mentioned, that seven large canoes were wrecked at the entrance of the harbour. These canoes, a draught of which was taken from the only one saved, were thirty-four feet long, four broad, and six deep. Dimensions so considerable rendered them fit for long voyages. They were covered with seal-skins, after the manner of those of the Esquimaux; which led us to suppose, that Port des Français is a station for trade, inhabited only in the fishing season. It appeared to us very possible, that the Esquimaux in the neighbourhood of the islands of Schumagin, and of the peninsula explored by Cook, extend their commerce to this part of America, whither they bring iron and other articles, carrying back, with profit to themselves, otter-skins, of which the latter* are so desirous. The form of the canoes lost, and the great quantity of skins we procured,

* *Ces derniers* in the original. But should we not read *les Russiens*, "the Russians"? The printer might easily have made the mistake if the hand-writing of the manuscript were not very plain: and it might as easily have been overlooked by the editor, who was not the writer himself. The correction appears necessary also to the chain of argument. T.

1786. which may have been collected here to be sold to these strangers, seem to
 July. confirm this conjecture. I should not have hazarded it, however, but that
 it appears to account better than any other for the iron and other Euro-
 pean wares in their possession.

Of the passion of these Indians for gaming I have spoken above. The kind to which they are addicted is altogether a game of chance. They have thirty little sticks, each marked with a different number *. Seven of these they hide. Each plays in turn, and he who guesses nearest to the number on the seven sticks, gains the stake, which is commonly a piece of iron, or a hatchet. This game renders them grave and melancholy: yet I have often heard them sing, and when the chief came to visit me, he commonly paraded round the ship singing, with his arms stretched out in form of a cross as a token of friendship. He then came on board, and acted a pantomime expressing either a battle, a surprise, or death. The air that preceded this dance was pleasing, and tolerably melodious. The following are the notes of it, as accurately as we could take them down †.



* "Differently marked like our dice," in the original. But this cannot be, because our dice are all marked in the same manner. "Like the different sides of our dice," is probably the meaning of the author. T.

† They who have the strongest voices take the air a third lower, and the women a third higher, than the natural pitch. Some sing an octave to it, and often make a rest of two bars, at the place where the air is highest.

M^r de Lamanon is the author of the following dissertation on the language of this people. I shall only insert here the numerical terms, as a satisfaction to those readers who may wish to compare those of different nations *. 1786.
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One	-	-	-	<i>keirrk.</i>
Two	-	-	-	<i>theirb †.</i>
Three	-	-	-	<i>neisk.</i>
Four	-	-	-	<i>taakboun.</i>
Five	-	-	-	<i>keitschine.</i>
Six	-	-	-	<i>kleitouchou.</i>
Seven	-	-	-	<i>takatouchou.</i>
Eight	-	-	-	<i>netskatouchou.</i>
Nine	-	-	-	<i>kouehok.</i>
Ten	-	-	-	<i>tchinecate.</i>
Eleven	-	-	-	<i>keirkrba-keirrk.</i>
Twelve	-	-	-	<i>keirkrha-theirh.</i>
Thirteen	-	-	-	<i>keirkrha-neisk.</i>
Fourteen	-	-	-	<i>keirkrba-taakboun.</i>
Fifteen	-	-	-	<i>keirkrba-keitschine.</i>
Sixteen	-	-	-	<i>keirkrba-kleitouchou.</i>
Seventeen	-	-	-	<i>keirkrha-takatouchou.</i>
Eighteen	-	-	-	<i>keirkrba-netskatouchou.</i>
Nineteen	-	-	-	<i>keirkrba-kouebok.</i>
Twenty	-	-	-	<i>theirba.</i>
Thirty	-	-	-	<i>neiskrba.</i>
Forty	-	-	-	<i>taakbounrha.</i>
Fifty	-	-	-	<i>keitschinerka.</i>

* A more extensive vocabulary, comprising the languages of different nations visited by our navigators, has been mentioned as the work of M^{ssrs} Monneron, Lesseps, Lavaux, Lamanon, abbé Mongès, and father Receveur; but it never came to hand. (French Editor.)

† To represent the guttural *r*, which these people pronounce still harder than the Germans their *cbr*, I have employed *rb*, to be sounded as in pronouncing *rbabiller*, speaking very thick, as more conformable to the French language.

1786. July.	Sixty	-	-	-	<i>kleitouchourba.</i>
	Seventy	-	-	-	<i>takatouchourba.</i>
	Eighty	-	-	-	<i>netskatouchourba.</i>
	Ninety	-	-	-	<i>kouebokrba.</i>
	One hundred	-	-	-	<i>tchinecaterba.</i>

“ Our characters are not capable of denoting the language of these people. It is true they have some articulations resembling ours, but to many we are absolutely strangers. They make no use of the consonants B, F, X, J, D, P, V; and notwithstanding their talent for imitation, they could never pronounce the first four. It was the same with the liquid L, and the liquid G N. They articulate the letter R as if it were double, and by speaking very thick. The *chr* of the Germans they pronounce as hard as the Swiss of certain cantons. They have likewise an articulate sound very difficult to catch, which we could not attempt to imitate without exciting their laughter: it may be partly represented by the letters *kblrl*, making but one syllable, and pronounced by the help of the tongue and throat at the same time. This syllable may be found in the word *kblrleies*, signifying the hair of the head. Their initial consonants are K, T, N, S, M; of which the first are most frequently used. None of their words begin with R; and almost all end with *ou*, *ouls*, *oulch*, or some vowel. Their thick speaking, the frequent recurrence of the letter K, and their double consonants, render the language very harsh. It is less guttural when spoken by the men, than by the women, who cannot pronounce the labials, on account of the piece of wood, named *kentaga*, which they fix in the lower lip.

“ The harshness of their language is less perceptible when they sing. It was not in my power to make many observations on the parts of speech, from the difficulty of communicating abstract ideas by signs: I observed, however, that they have interjections to express the sentiments of admiration, anger, and pleasure. I do not think they have any articles, for I found no words frequently recurring, and serving to connect their discourse. They are acquainted with numerical relations, and have names

1786.

July.

of numbers; yet they do not distinguish the plural from the singular, either by difference of termination, or by articles. I showed them a seal's tooth, which they called *kaourré*; and they gave the same name, without any variation, to several teeth together. They have not sufficiently generalised their ideas, to have words in any considerable degree abstract: they have not sufficiently particularised them, not to give the same name to things very distinct. Thus, with them, *kaaga* signifies equally the head and the face; and *alcaou*, a chief and a friend. I did not find any resemblance between the words of this language, and those of the language of Alaschka, Norton's Sound, and Nootka Sound, or of the Greenlanders, Esquimaux, Mexicans, Nadouessies, or Chipawaws, with the vocabularies of which I have compared it. I have spoken to them words of all these tongues; but they did not understand one of them, though I varied my pronunciation as much as possible: yet, although perhaps there is not a single idea, or a single thing, to express which the same word is used by the people at Port des Français and those whom I have mentioned, still there must be a great affinity of sound between this language and that of Nootka. K is the predominant letter in each, occurring in almost all their words. The initial consonants, and the terminations, are often the same in both. And it is not impossible, perhaps, but the language of Port des Français may have a common origin with that of Mexico: though this origin, if it be a fact, must be referred to a very remote age, since the two idioms have an affinity only in the primary elements of words, not in their signification."

I shall finish the article respecting these people by observing, that we found among them no trace of anthropophagy: yet it is so general a custom among the American Indians, that perhaps I should have been able to have added this stroke to the picture, had they been at war, and taken a prisoner*.

* Captain Meares has proved, by his account of his voyages, that the people inhabiting the north-western coast of America are cannibals. (French Editor.)

CHAPTER X.

Departure from Port des Français—We proceed to explore the Coast of America—Captain Cook's Bay of Islands—The Pilot Maurelle's Ports of los Remedios and Bucarelli—Iles de la Croyère—Islands of San Carlos—Description of the Coast from Cross Sound to Cape Hector—We reconnoitre a large Gulph, or Channel, and accurately determine it's width—Iles Sartin—Captain Cook's Woody Point—Verification of our Time-Keepers—Pointe des Brisans—Iles Necker—Arrival at Monterey.

1786.
August.

THE forced stay I had just made at Port des Français compelled me to change the plan of my navigation on the coast of America. I had still time to run it down, and ascertain it's direction; but it was impossible for me to think of putting into any other harbour, still less of reconnoitring every bay. All my schemes must be subordinate to the absolute necessity of arriving at Manilla by the end of January, and at China in the course of the month of February, in order to employ the following summer in exploring the coasts of Tartary, Japan, Kamtschatka, and the Aleutian Islands. I saw with regret, that a plan so extensive allowed me time only to glance at objects, and never to clear up any doubt: but as I was obliged to navigate seas in which monsoons prevail, I must either lose a whole year, or arrive at Monterey between the 10th and 15th of September, spend only six or seven days there in recruiting our stock of wood and water, and then traverse, with all possible speed, a space of more than 120° of longitude, or near 2400 leagues, on the Pacific ocean. I had well founded apprehensions, that I should not have time to visit the Caroline Islands, and those to the north of the Ladrones, as I had been directed. Whether we should explore the Carolines was to be determined by our

being more or less fortunate in our passage ; and this we might reasonably presume would be long, in consequence of the bad sailing of our vessels : beside, the geographical situation of these islands, which lie far to the west, or to leeward, would not allow me to include them without difficulty, in my farther schemes of navigation to the south of the line.

1786.
August.

These different considerations determined me to give M^r de Langle fresh places of rendezvous, in case of separation. I had appointed him Port de los Remedios and Nootka Sound ; but it was agreed between us, that we should stop only at Monterey. This port was preferred, because, being the most distant, on our arrival there, we should have the greater quantity of wood and water to replace.

Our misfortune at Port des Français required some change in our staff : on M^r Darbaud, a very well-informed midshipman, I conferred an ensign's commission ; and a lieutenant's on M^r Broudou, a young volunteer, who had given me, since we left France, various proofs of his intelligence and zeal.

I proposed to the officers and passengers, to sell our furs at China for the profit of the crew alone ; and my proposal being unanimously received with transport, I gave M^r Dufresne an order to act as supercargo. This commission he executed with a zeal and judgment, which I cannot too highly commend. He had the management of the purchasing, packing, sorting, and selling, the different furs ; and as I am certain there was not a single skin privately bought, this arrangement enabled us to learn, with the utmost precision, their price in China, which might have been altered by a competition in the sale. It was likewise of greater advantage to the sailors ; and they were convinced, that their interest and health had never ceased to be the principal objects of our attention.

The renewal of our voyage was not very fortunate at the commencement, and by no means answerable to my impatience. We advanced only six

1786. leagues in the first eight and forty hours. The light winds during these
August. two days varied through the eastern half of the compass from north to south. The weather was dull and foggy. We were constantly within three or four leagues of the shore, and in sight of the low land; but the high mountains we could see only at intervals. This was sufficient to connect our bearings, and ascertain with precision the direction of the coast, the most remarkable points of which we took care to fix by accurate determinations of the latitude and longitude. I could have wished, that the winds had permitted me to examine this coast rapidly as far as Cape Edgecumbe, or Enganno, because it had already been visited by Cook, though indeed he ran along it at a considerable distance: but his observations were so exact, that if he made any mistakes they must have been infinitely small: and I felt, that, equally hurried with that celebrated navigator, it was no more in my power than in his to attend to minutiae, which would require to be the object of a particular expedition, and occupy several seasons. I was extremely eager to arrive at the latitude of 55° , and have a little time to bestow in reconnoitring thence to Nootka Sound, a gale of wind having driven Cook fifty or sixty leagues off that part of the coast. It was in this part of America, that the Chinese must have landed, according to M^r de Guignes; and it was also in this latitude, that admiral Fuentes found the entrance of the Archipelago of Saint Lazarus.

I was far from giving credit to the conjectures of M^r de Guignes, or the narrative of the Spanish admiral, whose very existence I believe may be disputed: but, struck with the observation I have already made, that all the islands and countries, mentioned in the ancient accounts of the Spaniards, have been re-discovered in modern times, though their longitude and latitude were very inaccurately given, I was induced to imagine, that some ancient navigator of that laborious nation had found a gulph, the entrance of which might be in this part of the coast; and that this single fact might have served as a foundation to the ridiculous romance of Fuentes and Bernarda. If I should find such a channel, it was not my intention to penetrate into it, as the season was too far advanced; and I could not think of

sacrificing the whole plan of my voyage to such a search, unless in the hope of being able to reach the sea on the east of America by traversing it's continent. But as I was certain, from Hearne's journey, that this passage was a mere chimera *, I was resolved merely to ascertain the breadth of this channel, and it's length for twenty-five or thirty leagues, according to the time I should have ; leaving to such nations as the English, Spaniards, and Americans, who have possessions on the American continent, to explore it more accurately, which could be of little advantage to general navigation, the sole object of our voyage.

1786.
August.

The fog, rain, and calms, did not cease till the 4th at noon ; when we had an observation in latitude $57^{\circ} 45'$ north, three leagues from the land, which we could not perceive very distinctly on account of the haze. Fortunately it cleared up at four o'clock, when we perfectly distinguished the entrance of Cross Sound, which appeared to me to form two bays, stretching very far into the land, and in which it is probable vessels would find good anchorage.

4.

The high mountains covered with snow, the peaks of which are thirteen or fourteen hundred toises above the level of the sea, terminate here. The hills on the sea side, to the south-east of Cross Sound, though they have still eight or nine hundred toises elevation, are covered with trees to their summits ; and the chain of primary mountains appears to me to run far into the interior of America. At sun-set the west point of Cross Sound bore north 25° west, distant about five leagues ; Mount Fairweather, north, 5° west ; and Mount Crillon, north 45° west. This mountain, almost as lofty as Mount Fairweather, is to the north of Cross Sound, as Mount Fairweather is to the north of Port des Français. They serve as marks for the harbour to which they are adjacent. It would be easy to mistake one for the other in coming from the southward ; but they differ $15'$ in latitude, and Mount Fairweather appears from every point of view,

* La Pérouse, too honest to suspect a political falsity in the account of Hearne's journey, delivers, in this place, an opinion altogether opposite to mine. I shall hereafter resume this important subject. See the notes, page 258 and 357. (French Editor.)

1786. accompanied with two less lofty mountains, while Mount Crillon is more
August. isolated, and it's point inclines toward the south. I continued to run along the coast at the distance of three leagues; and the mountains being still very hazy, and the low land visible only at intervals, we exerted ourselves to distinguish the heights, that we might not lose the chain of our bearings.

Our progress was very slow, as we made only ten leagues in twenty-four hours. At daybreak I set a cape bearing north 29° west, on the south of the entrance of Cross Sound, which I called Cape Cross*. We had on our beam an infinite number of little low islands, covered with wood: the high hills appeared in the back ground; and the mountains covered with snow were no longer visible. I approached the little islands, so as to bring the breakers within sight from the deck, and I perceived between them several passages, which must form good roads. It was to this part of America Cook gave the name of Bay of Islands. At sunset the entrance of the Port de los Remedios bore from us east 2° south, that of Guadaloupe Bay east 21° south, and Cape Enganno east 33° south; but all these points, all these capes, were badly defined, on account of the fog that covered their summits.

From Cross Sound to Cape Enganno, an extent of twenty-five leagues, I am convinced twenty different harbours might be found, and three months would hardly suffice to explore the labyrinth. For my part I confined myself, in pursuance of the plan I had formed on my departure from Port des Français, to determine with accuracy the beginning and end of these islands, their direction along the coast, and the entrances of the principal bays.

6. On the 6th the weather cleared up a little, we were able to observe the

* Cook called it by the same name, but he fixes it's latitude at $57^{\circ} 57'$. This difference must arise from the configuration of the coast, which in this part presents several capes, and Cook certainly determined the position of that which appears on the chart farthest to the south. (French Editor.)

sun's altitude, and compare the true time with that given by our timekeepers. Our latitude was $57^{\circ} 18' 40''$; and our longitude, deduced from the new rate of going of our timekeepers, determined on Cenotaph Island, $138^{\circ} 49' 30''$. I have already mentioned the excellence of the timekeepers made by Mr Berthoud: their loss on the mean daily motion of the sun is so trifling, and so uniform, that this artist may be considered as having brought them to the highest degree of perfection of which they are susceptible.

1786.
August.

The 6th was a tolerably clear day, and our bearings were every thing we could wish. At seven in the evening we still discerned Mount Crillon north 66° west, Mount San Jacinto north 78° east, and Cape Enganno east 10° south*. This cape is a low land, advancing a considerable way into the sea; and Mount San Jacinto rests on it, the figure of which is a truncated cone rounded on the summit. Its height must be at least two hundred toises.

6.

In the morning of the 7th we perceived the coast on the side of Cape Enganno opposite to that along which we had sailed the preceding day. Mount San Jacinto appeared well defined, and we discovered to the east of it a wide bay, the head of which was concealed from us by a fog; but it lies so open to the south and south-east winds, which are the most dangerous, that a navigator must be cautious of anchoring in it†. The land is covered with trees, and of the same elevation as that to the south of Cross Sound. The summits of the mountains are slightly capped with snow, and they are so numerous and peaked, that a trifling change of situation is suffi-

7.

* The Mount San Jacinto and Cape Enganno of the Spaniards are the Mount Edgecumbe and Cape Edgecumbe of Cook. (French Editor.)

† Dixon anchored here to collect furs. He gave it the name of Norfolk Sound. Its latitude is $57^{\circ} 3'$ north; its longitude, reduced to the meridian of Paris, $138^{\circ} 16'$ west.

He anchored in eight fathoms, sandy ground, three quarters of a mile from the shore. Cook saw the entrance of this sound on the 2d of May, 1778, but he did not come to an anchor here. (French Editor.)

1786. cient to alter their appearance. These heights are some leagues within
August. the land, and appear in the distance: in front of them are hills; and these
subside into a low land with gentle risings, which terminates in the sea.
Before this undulating coast are islands resembling those I have already
mentioned. We determined the situation only of the most remarkable,
the others are set down at hazard, merely to show, that they are very nu-
merous: Then, both to the north and to the south of Cape Enganno, for a
space of ten leagues, the coast is bordered with islands. By ten in the morn-
ing we had doubled them all, the hills appeared open, and we could deline-
ate their outlines. At six in the evening we set a cape to the north-east,
which advanced a great way to the west, and formed, with Cape Enganno,
the south-east point of the great bay, one third of which, as I have already
observed, is filled with small islands. Between the last of these islands and
the new cape, we saw two large bays*, which appeared to run far into the
land. To the last mentioned cape I gave the name of Tschirikow, in ho-
nour of the celebrated Russian navigator, who landed in this part of Ame-
rica in 1741. Behind this cape, to the east is a spacious bay, which I
likewise named Tschirikow Bay. At seven in the evening I made a group
of five islets†, separated from the continent by a channel of four or five

* These two bays, which la Pérouse named Port Necker and Port Guibert, are so near, that it is doubtful in which Dixon anchored: but this navigator, having coasted along the shore on each side of his anchorage, which he called Port Banks, found no bays but what were much smaller than that in which he was, and entirely uninhabited.

The latitude of Port Banks is 56° 35'

It's longitude west, reduced to the meridian of Paris, - - - 137° 20'

(French Editor.)

† Dixon has marked these five islets on his chart by the name of Hazy Isles.

According to the determination of la Pérouse they are in

Latitude north	- - - - -	55° 50' 0"
Longitude west	- - - - -	137 11 0

According to Dixon,

Latitude north	- - - - -	55 50 0"
Longitude west, reduced to the meridian of Paris,	- - -	137 0 45

I believe I need not adduce any arguments to prove, that the determinations of la Pérouse deserve in every respect the preference. (French Editor.)

leagues, and mentioned neither by Cook nor Maurelle. This group I named the Islands of *la Croyère*, in memory of the French geographer de Lisle de la Croyère, who sailed with captain Tschirikow, and died on the voyage. As night approached I stood towards the offing. The breeze from the west continued favourable to us the whole day of the 8th; and we made our observation in latitude $55^{\circ} 39' 31''$ north, longitude by our timekeepers $137^{\circ} 5' 23''$ west. We perceived several wide openings between considerable islands, which appeared at different distances; while the continent was so remote, that we could not discern it. This new archipelago, very distinct from the former, begins four leagues to the south-east of Cape Tschirikow, and reaches probably to Cape Hector. The currents near these islands are very strong, and were felt by us at the distance of three leagues. The Port Bucarelli of Maurelle is in this part. (*Charts and Plates*, N^o 26.) Both his chart, and the explanation of it, were unintelligible to me. But his volcanoes, and his Port Bucarelli, are situate in islands perhaps forty leagues from the main-land. I own I should not be surprised to learn, that we had coasted along nothing but islands since we left Cross Sound*; for the aspect of the land was very different from what it was farther north, and I observed the lofty chain of Mount Crillon lose itself in the east.

1786.
August.

8.

The 9th, at seven in the morning, as we continued to run along the land at the distance of three leagues, we saw the islands of San Carlos. The largest lies south-east and north-west, and may be two leagues in circumference. A long chain unites it to some other islets, very small and low, which extend a considerable way into the channel. I am persuaded, however, that a passage is left sufficiently wide†: though I was not sufficiently

9.

* Dixon is of a similar opinion, and I think every probability is in it's favour.

—“So that we were near the middle of the island toward the northward and eastward. In this situation we saw high land to the north-west, near 30 leagues distant, and which evidently was the same we had seen on the 1st of July. This circumstance clearly proved the land we had been coasting along for near a month, to be a group of islands.” Dixon's Voyage, p. 216. (French Editor.)

† This passage appears actually to exist. Dixon likewise saw it, and had recourse to it to trace, partly at a venture, the strait to which he gave his name. (French Editor.)

1786. certain of this to venture to explore it, as the wind set right in; so that if
August. my conjectures had not been well founded, I should have found it very difficult to double the islands of San Carlos in the offing, and have lost time that was precious to me. I ranged along the outermost of the islands within half a league; and at noon, being at this distance west of the south-east point, we determined it's position with the utmost accuracy, to be in $54^{\circ} 48'$ of latitude north, and $136^{\circ} 19'$ of longitude west.

It blew a fresh breeze from the west-north-west; the weather thickened, and I crowded sail towards the land, over which the fog increased as we approached. At half after seven in the evening, we were scarcely above a league from the shore, yet I could scarcely discern it, though the breakers were in sight from the deck. I set a large cape, which bore by the compass east-north-east, but nothing was perceptible beyond it, so that it was impossible to form any judgment of the direction of the coast: accordingly I thought it advisable to wear ship, and wait for clearer weather. The fog dispersed only for a moment.

10. On the 10th. of August at noon we observed in latitude $54^{\circ} 20'$ north, longitude $135^{\circ} 20' 45''$ west by our timekeepers. I had stood again towards the land from four o'clock in the morning, and I perceived it a league and half distant in the south-west, on the breaking of the fog. It had the appearance of an island: but the clear space was of so little extent, and so short duration, that it was impossible to make any thing out distinctly. As we had not expected to find land in this point of the compass, our uncertainty of the direction of the coast was increased. During the night we had crossed currents more rapid than any I ever met with in the open sea; but as our reckoning agreed with our observations, it is probable, that the currents were occasioned by the tide, and set with equal force in opposite directions, so as to balance each other.

The weather grew very foul in the night of the 10th. The fog thickened, and it blew a strong gale. In consequence I stood out to sea. At day-break we put about again, and approached so near the land, that at

one in the afternoon I made the same point as we saw the evening before. It extended from the north-north-east to south-east by south, and connected almost all our bearings, leaving however an opening of eight or nine leagues, where we perceived no land. I know not whether this were owing to the fog, or to some deep bay or other openings in that part; but I presume the latter, on account of the strength of the currents of which I have spoken. Had the weather been more clear, we should have left no doubt on this head, since we approached within a league of the land, and saw the breakers distinctly. It runs much farther to the south-east than I supposed from the chart of the Spanish pilot, which merits no confidence. We had an observation at noon, which gave us $54^{\circ} 9' 26''$ of latitude north; and I continued to run along the coast at the distance of a league till four o'clock in the afternoon, when the fog thickened so much, that we could no longer see the Astrolabe, though we were within hail of her, and I stood off to sea. During the whole of the 12th the weather never cleared up; and as I was so uncertain of the direction of the land, I increased my distance from it to ten leagues. On the 13th and 14th the weather was foggy, and almost a calm. I availed myself of the light breezes to re-approach the land, from which, at six in the evening, we were still five leagues distant.

1786.
August.

12.

13. 14.

Since we passed the islands of San Carlos, we had never been able to find bottom with a line of a hundred and twenty fathoms, even within a league of the land.

On the 15th the weather cleared up, and we got within two leagues of the land. In some places it was skirted with breakers, which extended a considerable way into the offing. The wind blew from the east, in which point we set a large bay. The horizon was very extensive, though the sky was cloudy. We could see the coast for eighteen or twenty leagues on either hand; it stretched from the north-north-east to the south-south-east, and appeared to run south-south-east and north-north-west much farther to the south than I imagined.

15.

1786. At eight o'clock in the morning I was obliged to stand off shore, on
 August. account of a thick fog with which we were surrounded, and which continued till ten o'clock on the 16th. We then saw the land very indistinctly to the north-east; but the fog soon obliged me to lay the ship's head towards the offing again. The whole of the 17th was calm; the mist at length dispersed, and I perceived the land at the distance of eight leagues. The want of wind did not allow me to get near it; but we took excellent observations of the moon's distance from the sun for the first time since we left Port des Français. Our latitude was $53^{\circ} 12' 40''$; our longitude, according to our timekeepers, $136^{\circ} 52' 57''$; but the mean result of our lunar observations gave $137^{\circ} 27' 58''$, or $35' 1''$ more to the west, and that of the Astrolabe $15'$ less. The breeze from the west-north-west having freshened, and the weather continuing clear, I approached the land, and was within a league and half of it on the 18th at noon. Running along the coast at this distance, I discovered a bay of such depth, that I could not discern the land at the head of it. I gave it the name of *Baie de la Touche*. It lies in latitude $52^{\circ} 39'$ north, longitude $134^{\circ} 49'$ west, and, I have no doubt, affords very good anchorage.

A league and half farther to the east we saw another inlet, in which possibly good shelter for ships may likewise be found, but it appeared to me far inferior to *Baie de la Touche*. From the parallel of 55° to 53° the sea was covered with that species of diver, named by Buffon *macareux du Kamtschaka* *. This bird is black; its beak and claws are red; and on the head are two stripes of white feathers, which rise in form of a crest, like those of the cockatoo. We perceived some to the southward, but they were rare, and appeared to be in some sort travellers. These birds never venture more than five or six leagues from the land, and seamen who meet with them during a fog may be nearly certain they are within that distance. We shot two, which were stuffed. This bird is known only by Behring's Voyage †.

* The tufted auk. La Pérouse is mistaken in calling it a species of diver, *plongeon*. T.

† Captain Cook also met with it on the coast of Alascha. (French Editor.)

VOYAGE ROUND THE WORLD.

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On the 19th, in the evening, we had sight of a cape, which appeared to terminate the coast of America. The horizon was very clear, and we perceived nothing beyond it but four or five small islets, to which I gave the name of *Îlots Kerouart*, and the point I called *Cape Hector* *. We lay becalmed the whole night within three or four leagues of the land, which a light breeze from the north-west allowed to me to get nearer at break of day; when I was convinced, that the coast I had been sailing along for two hundred leagues ended here, and probably formed the opening of a gulph or very wide channel, as I could see no land to the east, though the weather was very clear. Accordingly I steered my course to the north, to discover the back of the land which I had coasted along on the western side. I stood within a league of Kerouart Islets and Cape Hector, and traversed very strong currents, which even obliged me to bear up, and stand off shore. It appeared to me of considerable importance to determine the situation of Cape Hector, which forms the entrance of this new channel. It's latitude is $51^{\circ} 57' 20''$ north, and it's longitude, by our timekeepers, $133^{\circ} 37'$ west. Night did not allow me to advance farther to the north, so I stood off and on till day-break, when I resumed my course. The weather being very clear, I saw the back of la Touche Bay, to which I gave the name of *Cape Buache*, and more than twenty leagues of the eastern coast of the land I had run along the preceding days. Recollecting then the form of the land from Cross Sound, I was greatly inclined to suppose, that this inlet resembled the Gulf of California, and extended as far as the parallel of 57° north. Neither the season, nor my farther schemes, would allow me to satisfy myself on this head; but I resolved at least to ascertain the breadth of this channel or gulf.

1786.
August.
19.

* It is the Cape St James of Dixon.

La Pérouse's Cape Hector.

Latitude north	- - - - -	$51^{\circ} 57' 20''$
Longitude west	- - - - -	$133^{\circ} 37'$

Dixon's Cape St James.

Latitude north	- - - - -	$51^{\circ} 46'$
Longitude west, reduced to the meridian of Paris	- - - - -	$132^{\circ} 20'$

1786. whichever it may be called, east and west, and in consequence directed
 August, my course north-east. On the 21st, at noon, we were in latitude, by
 21. observation, $52^{\circ} 1'$ north, and longitude $133^{\circ} 7' 31''$ west: Cape Hector
 bore south-west distant ten or twelve leagues, and we had no soundings.
 The wind soon shifted to the south-east. A thick fog succeeded to that
 clear sky, which had allowed us in the morning to see the land at the di-
 stance of eighteen or twenty leagues; and it blew very fresh. Prudence for-
 bad me any longer to continue my course to the north-north-east; accord-
 ingly I hauled my wind, and stood off and on under close-reefed top-sails
 the whole night. At day-break, the wind abating, though the horizon
 was still foggy, I stood in for the land, and perceived it at noon through
 the fog. My latitude, by estimation, was then $52^{\circ} 22'$; the coast ex-
 tended from north by east to east by north; and our soundings were a
 hundred fathoms water, rocky ground. After a short interval of a clear
 sky, the fog thickened again, and the weather had a threatening appear-
 ance. Again I stood off the shore; but fortunately I had taken very good
 bearings, and had ascertained the width of the channel or gulf from east
 to west, which was about thirty leagues between Cape Hector and *Cape*
Fleurieu *, the name I had given to the south-easternmost island of the
 new cluster I had just discovered, on the eastern coast of this channel.

It was behind this cluster of islands that I discovered the continent, the
 primary mountains of which, destitute of trees, and covered with snow,
 appeared in ranges, one behind another, terminating in peaks seemingly
 upwards of thirty leagues within the land. Since leaving Cross Sound,

* Dixon calls it Cape Cox.

Cape Fleurieu of la Pérouse.

Latitude north	-	-	-	-	-	-	$51^{\circ} 45'$
Longitude west	-	-	-	-	-	-	$131^{\circ} 15'$ †

Cape Cox of Dixon.

Latitude north	-	-	-	-	-	-	$51^{\circ} 30'$
Longitude west, reduced to the meridian of Paris	-	-	-	-	-	-	$130^{\circ} 32'$

(French Editor.)

† A few pages farther on it is $131^{\circ} 0' 15''$. T.

VOYAGE ROUND THE WORLD.

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we had seen comparatively nothing but hills, and my conjectures respecting an inlet of six or seven degrees to the north were strengthened by this. The season did not permit me to investigate this opinion farther. Already we were near the end of August: the weather was almost continually foggy: and the days began to shorten. But above all, the fear of missing the Chinese monsoon induced me to give up this search, which would have required at least six weeks, on account of the precautions necessary in an enterprise of this kind, which should be undertaken only in long days and fine weather. A whole season would be scarcely sufficient for such a labour, which ought to be the object of a particular expedition: ours, infinitely more extensive, was accomplished by the accurate determination of the width of this channel, into which we penetrated about thirty leagues. We also fixed the latitudes and longitudes of the capes, which form the two extremities of it's mouth, with such precision, that as much dependance may be placed upon them, as upon the most remarkable of the coasts of Europe. It was with regret I saw, that we had advanced but a very little way since we left Port des Français, and I had not a moment to lose in my passage to Monterey. The reader will be sensible, that, during the whole course of this voyage, my imagination was always obliged to precede my vessel two or three thousand leagues, because my routes were to be accommodated to the monsoons and to the seasons; in every part of the two hemispheres I was to explore, as I had to visit very high latitudes, and traverse straits between New Holland and New Guinea, subject probably to the same monsoons as those of the Moluccas, or other islands in the same sea.

1786.
August.

The fog was very thick during the night, and I stood to the south-south-west. At day break there was a very fine clear, though only for a short time; but at eleven o'clock the fog entirely dispersed. We set cape Fleurieu north-east by north, and had excellent observations. Our latitude was $51^{\circ} 47' 54''$: our longitude, by our time-keepers, $132^{\circ} 0' 50''$. We lay becalmed the whole day; but after sunset the wind shifted to the north-west, with a very hazy horizon. I had previously set cape Fleu-

23.

1786. rieu north by east. It's latitude and longitude, determined by M^r Dagelet, are $51^{\circ} 45'$ north, $131^{\circ} 0' 15''$ west *.

August.

I have already said, that this cape forms the point of a lofty island, behind which I could no longer perceive the continent, as it was concealed by the fog. It grew still thicker in the night, and I often lost sight of the Astrolabe, though I could hear her bell.

24.

At day-break the weather became fine. Cape Fleurieu bore north-west 18° west, distant eighteen leagues. The continent stretched as far as due east. The horizon, though dull, allowed it to be seen at the distance of twenty leagues. I steered east to get nearer the land, but the coast soon became again covered with fog, and a break in the south-south-east enabled me to discern a cape in that point of the compass.

That I might not be embayed in a gulph from which I should find it difficult to extricate myself, by running to the east before the wind, I altered my course, and soon discovered, that the land to the south-south-east, toward which I was now steering, was formed by several clusters of islands, which extended from the continent to the islands in the offing, and on which I could not see a single bush. I passed within a mile of them; and we could perceive grass and drift-wood upon the shore. The latitude of the westernmost island is $50^{\circ} 56'$, and the longitude $130^{\circ} 38'$. I gave these clusters the general name of *Iles Sartine* †. It is probable a passage might be found between them: but it would not be prudent to venture in without caution. After having doubled them, I stood toward the continent, steering east-south-east. It bore from the north-north-east to south-east by east. The horizon was a little foggy, though pretty extensive. We could no longer distinguish the summits of the mountains, though we saw the low land very plainly.

* In the last note of the editor, p. 424, it is $131^{\circ} 15'$. T.

† The Beresford's Islands of Dixon, who assigns them $50^{\circ} 52'$ of north latitude, and $132^{\circ} 3'$ of west longitude, reduced to the meridian of Paris. (French Editor.)

I continued standing on and off the whole night, that I might not pass Cook's Woody Point, the situation of which he determined; as thus the line of coast would be complete from Mount Elias to Nootka Sound, and I should have the advantage of comparing our longitudes with his, which would remove every doubt of their accuracy. At day-break I stood in for the land, and passed within a league and a half of Woody Point, which bore at noon north by west, distant about three leagues. It's latitude is precisely $50^{\circ} 4'$ north; and it's longitude $130^{\circ} 25'$ west. Captain Cook, who was not so near to it as we, and determined it only from his bearings, placed it in his chart in the latitude of 50° , and longitude $130^{\circ} 20'$, reduced to the meridian of Paris, that is to say, $4'$ farther south, and $5'$ farther east: but our determination merits most confidence, because we were much nearer the land, and our estimation of the distance was less liable to be erroneous. I cannot help remarking here the astonishing precision of the new methods, which in less than a century would assign to every point of the earth it's true situation, and contribute more to the advancement of geography than all the ages that have hitherto elapsed.

1786.

August.

On the 25th I continued to stand to the eastward, being desirous of making Nootka Sound before night, though this was of little importance after having accurately determined Woody Point. A very thick fog, however, which came on about five in the afternoon, completely hid the land from me, and I shaped my course for Breaker Point, fifteen leagues south of Nootka, in order to reconnoitre the coast between Cape Flattery and Breaker Point, a space of about thirty leagues, which Cook was not able to explore.

25.

On the 26th the weather continued very foggy. The wind was squally and variable from north-east to south-east. The barometer fell: yet no gale of wind came on; but we remained in a dead calm, without steerage-way, till the 28th. I had availed myself of some slight breezes to gain an offing from the land, the direction of which I imagined to be south-east. We were surrounded with small land-birds, which settled on our rigging, and several of which we caught; but they were of kinds so com-

26.

27.

28.

1786. mon in Europe, that they are not worth describing. At length, on the
 August. 28th, at five in the evening, the weather cleared up, and enabled us to
 28. distinguish Cook's Breaker Point, which bore north of us, with the land
 stretching from it as far as the north-east. It continued clear only a short
 time, but sufficient for us to take good bearings.

29. The weather was equally thick on the 29th of August; but the baro-
 meter rose, and I stood towards the land, hoping it would clear up before
 night. We hove the lead every half hour. Our soundings changed from
 seventy fathoms, sandy bottom, to forty fathoms, pebbly ground; and
 after sailing a league, we had seventy-five fathoms, with a bottom of
 mud. It was clear we had passed over a bank: and perhaps it is not
 easy to explain how a hill of pebbles, a hundred and fifty feet high, and
 a league in extent, should be found on a bed of sand, eight leagues from
 the shore. It is well known, that these pebbles are smoothed only by
 friction; and to account for this heap, we must suppose a current like
 that of a river at the bottom of the sea.

At length, as I had flattered myself, it cleared away at sun-set. We
 set the land from the east-north-east to the north-west by north, and these
 bearings formed an accurate connection with those of the preceding day.
 At noon we had an observation in latitude $48^{\circ} 37'$. Our longitude, by
 our time-keepers, was $128^{\circ} 21' 42''$. The farthest point we saw to the
 south-east could not be more than six or seven leagues from Cape Flat-
 tery, which I was very desirous of making, but the fog was very thick.

30. On the 30th the sea grew very boisterous; the wind was variable from
 south to south-west; and I regained the offing. The horizon extending
 less than half a league from the ship, I sailed on a parallel with the coast,
 to get as soon as possible into the latitude of 47° , that I might explore the
 land thence to 45° , that part forming a gap in Cook's chart.

September. At noon, on the 1st of September, I made a point, or cape, bearing
 1. north-north-east, about ten leagues distant, and by our bearings precisely

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in the latitude of 47° . The land stretched as far as the east, and I approached within three or four leagues of it. It was badly defined, being enveloped in fog. My latitude observed at noon was $46^{\circ} 36' 21''$: my longitude, by our time-keepers, $127^{\circ} 2' 5''$ west, by lunar observations $126^{\circ} 33'$. The currents on this coast are extremely violent: we fell in with eddies, which would not suffer the ship to obey her helm with a three-knot gale, five leagues from the land.

1786.
September.

During the night, I stood along the coast, with the ship's head to the southward, under an easy sail. At day-break, I laid the ship's head to the east to re-approach the land; but four leagues from the shore we were in a dead calm, so that we lay at the mercy of the currents, which turned us about every moment, and in continual apprehension of falling aboard the *Astrolabe*, which was in as bad a situation. Happily we had a good muddy bottom to anchor in, if the currents had drifted us towards the shore; but there was a very heavy sea, and our cables would with difficulty have resisted the pitching. The Cape Rondo of the Spaniards bore from us 5° south: the land extended thence as far as south-east: our latitude at noon was $45^{\circ} 55'$; our longitude by our time-keepers $126^{\circ} 47' 35''$ west, and by lunar observations $126^{\circ} 22'$. The day before the weather had at length allowed us to observe the distances of the moon for the second time since we left Port des Français; and [to-day] they gave us only $25' 35''$ * difference from the longitude of our time-keepers. This day of calm was one of the most uneasy I had spent since our departure from France. There was not a breath of wind the whole night. We hove the lead every half hour, that we might come to an anchor notwithstanding the heavy sea, if we had been drifted towards the land; but we constantly found eighty fathoms of water, with a muddy bottom.

At daybreak we were the same distance from the land as on the preceding evening. Our observation gave us, as the day before, $45^{\circ} 55'$. Our bearings were very nearly the same; and drifted by opposite currents, which had balanced each other, it seemed as if we had only been turning on a pivot for four and twenty hours.

* The day before, the difference was $29' 5''$. T.

1786. At length, at three o'clock, a light breeze sprung up from the north-
 September. north-west, by the help of which we were enabled to gain the offing, and
 get out of those currents, in which we had been two days involved. This breeze drove before it a fog-bank, in which we became enveloped, and which made us lose sight of the land. We had now scarcely more than five or six leagues of coast to explore to the latitude of 45° , the point reconnoitred by Cook. The weather was too favourable, and my time was too precious, not to avail myself of this fair wind. We set all the

4. sail we could carry, and steered south by west, nearly parallel to the coast, which runs north and south. The night was fine; and at day-break we saw the land north by east, the horizon being clear in that point of the compass, but very foggy farther to the east. We had occasional glimpses of the coast, however, to the east-north-east, and even as far as east-south-east. At noon we had an observation, and found our latitude to be $44^{\circ} 41'$: our time-keepers gave our longitude $126^{\circ} 56' 17''$ west, and we were about eight leagues from the land, which we approached by making easting in our course. At six in the evening we were within four leagues of the shore, which extended from north-east to east-south-east, and was very foggy. The night was very fine. I ran along the land, which we could see by the moonlight: at sun-rise, however, it was hidden by the fog; but it re-appeared at noon, the fog clearing away from north-east to south by east. Our soundings were seventy-five fathoms.
- 5.

Our latitude was $42^{\circ} 58' 56''$; and our longitude by our timekeepers $127^{\circ} 5' 20''$. At two o'clock we were abreast of nine small islands or rocks, about a league distant from Cape Blanco, which bore north-east by east. I named them *Iles Necker*. I continued to run along the land, standing to the south-south-east. At the distance of three or four leagues, we perceived only the summits of the mountains above the clouds. They were covered with trees, and we could see no snow. At night the land extended to the south-east; but the men at the mast-head said they saw it as far as south by east. Uncertain of the direction of the coast, which had never been explored, I kept under an easy sail to the south-south-west. At day-break we still saw the land, which stretched from the

6.

north to north by east. I steered south-east by east to get near it; but at seven in the morning a thick mist occasioned us to lose sight of it. 1786.
September.

We found the weather in this part of America less clear than in higher latitudes, where the navigators enjoyed, at least by intervals, the sight of every thing that was above their horizon; for to us the land never once appeared distinct in all it's parts. On the 7th the mist was still thicker than the day before. It cleared up, however, towards noon, and we saw the tops of mountains to the east, at a considerable distance. As we had made a southern course, it is evident, that from the latitude of 42° the coast begins to run to the east. Our latitude observed at noon was $40^{\circ} 48' 30''$ north: our longitude by our timekeepers $126^{\circ} 59' 45''$ west. I continued to steer so as to get nearer the land, from which I was only four leagues distant at the approach of night. We then perceived a volcano on the summit of the mountain which bore east from us. The flame was very vivid; but a thick fog soon concealed it from our sight. Deeming it prudent again to increase our distance from the land, as I was apprehensive, that, by following a course parallel to the coast, I might fall in with some rock or island at a little distance from the continent, I stood towards the offing again. 7.

The fog was very thick. On the 8th, about ten in the morning, it cleared up a little; and we perceived the summits of the mountains: but a veil, which our eyes could not pierce, constantly hid from us the low land. The weather was grown very bad: it blew extremely fresh; and the barometer fell considerably. I continued till the beginning of the night to steer south-east, so as to get nearer the land, while I ran along the coast; but I had lost sight of it ever since noon; and at night-fall the horizon was so thick, that I might have been very near without seeing it. As there was an appearance of a gale of wind; and as, if it came from the west, I should have been on a leeshore, I thought proper to stand out to sea under the foresail and maintopsail only. It blew hard, but much less so than I had expected. 8.

1786. At break of day the weather was cloudy, but the wind moderate, and I
 September. steered east towards the land. The fog soon made me change my course,
 9. and run along nearly parallel with the coast, the direction of which I
 10. 11. imagined to be south by east. On the 10th and 11th the weather was
 equally thick. The course made good these two days was south by east.
 Our horizon never extended two leagues, and very often less than a musket-
 shot. We had an observation, however, which gave us $36^{\circ} 58' 43''$ of
 north latitude. Our longitude by our time-keepers was $126^{\circ} 32' 5''$ west.
 Either we had made an error in our reckoning, or the currents had carried
 us $30'$ to the south: but we were still $16'$ north of Monterey. Though
 the atmosphere was foggy, we had an horizon of two leagues, and I steered
 east, directly towards the land. I remained standing on and off the whole
 12. night. The next day the weather was still thick; yet I continued my
 course towards the land. At noon our longitude was $124^{\circ} 52'$. I could
 see no land, but at four o'clock we were enveloped in fog, and I resolved
 to continue standing off and on, till the weather grew more clear. We
 could not be far from the shore, several land birds flew round us, and we
 caught a gerfalcon.
13. The fog continued all night; and the next day, at ten in the morning,
 we perceived the land very foggy, and very near us. It was impossible to
 make out what land it was. I approached within a league of it, and saw
 the breakers very distinctly. Our soundings were twenty-five fathoms.
 But though I was certain of being in Monterey Bay, it was impossible to
 distinguish the Spanish settlement in such thick weather. At the approach
 14. of night I stood out to sea again, and at day-break stretched in for the land,
 with a thick fog, which did not disperse till noon. I then stood along the
 shore at a very little distance, and at three o'clock in the afternoon we got
 sight of the fort of Monterey, and of two three-masted vessels in the road.
 The contrary winds obliged us to come to an anchor two leagues in the
 15. offing, in forty-five fathoms, muddy bottom; and the next day we anchored
 in twelve fathoms, within two cables length of the land. The command-
 er of the two vessels, Don Stephen Martinez, sent us pilots during the
 night: both he, and the governor of the presidency (*presidio*), having
 been apprised by the viceroy of Mexico of our expected arrival.

It is worthy remark, that during this long course, in the midst of the thickest fogs, the Astrolabe constantly sailed within hail of us, never being at a farther distance, till I ordered captain de Langle to reconnoitre the entrance of Monterey Bay.

1786.
September.

Before I conclude this chapter, which will appear interesting only to the navigator and geographer, I think it incumbent upon me to deliver my opinion respecting the pretended channel of Saint Lazarus of admiral de Fuentes. I am convinced this admiral never existed*, and that a voyage into the interior of America, through lakes and rivers, and performed in so short a time, is so absurd, that but for the spirit of system, which is injurious to all the sciences, geographers of a certain degree of reputation would have rejected a story destitute of all probability, and fabricated in England, at a time when the partisans and opponents of a north-west passage supported their opinions with no less enthusiasm, than was wasted at the same period in France on questions of theology a hundred times more ridiculous. The narrative of admiral de Fuentes, therefore, is to be ranked with those pious frauds, which sound reason has since rejected with the utmost contempt, and which cannot bear the light of discussion. But it may be considered as almost certain, that from Cross Sound, or at least from Port de los Remedios to Cape Hector, no navigator has coasted along any thing but islands to the latitude of 52° ; and that between the islands and the continent there is a channel, the breadth of which east and west may be more or less considerable; but I believe not exceeding fifty leagues, since it is reduced to thirty at it's mouth between Cape Hector and Cape Fleurieu. This channel must be interspersed with islands, rendering the navigation of it difficult; and I am persuaded, there are several passages between these islands communicating with the open sea. The Ports de los Remedios and Bucarelli of the Spaniards are at a great distance from the continent; and if a mere form of taking possession, followed by no settlement, were not a ridiculous title, those of the Spaniards in this part of America might be disputed: for I am convinced, that Maurelle never

* See the note, p. 357. (French Editor.)

1786. saw any part of the continent from 50° to $57^{\circ} 20'$. I am absolutely certain, however, that in Port des Français, to the north of Cross Sound, we were in America; because Behring's river, in $59^{\circ} 9'$, is so large, that none equal to it can be found unless in a land of great extent. I wished to have it explored by our boats, but they could not stem the currents of it's entrance. Our frigates anchored at it's mouth. The water was whitish and fresh three or four leagues in the offing. It is probable, therefore, that the channel between the islands and the continent does not extend farther north than $57^{\circ} 30'$. I know geographers may draw lines to the north-east, leave Port des Français and Behring's river in America, and prolong their channel to the north and east as far as their imagination will carry them: but such a labour, unsupported by facts, would be absurd; and it is sufficiently probable, that the mouth of some river, and perhaps a navigable one, may be found on the coast of America, which forms the eastern shore of this channel; for it can hardly be thought, that the declivity of the land directs all the rivers towards the east; a rule to which Behring's river would form an exception. It is even probable, that there would be no bar at the mouths of such supposed rivers; because the channel, which is of no great width, is sheltered by the islands on the west; and it is well known, that bars are formed by the re-action of the sea in opposition to the currents of rivers*.

* This chapter, so interesting to general navigation, will no doubt leave something to be wished by seamen and geographers, and particularly by the advocates for a north-west passage. Though I am myself of the number of the latter, I cannot help observing, that if la Pérouse had attempted to explore all the bays, all the great openings, to be found on this immense extent of coast strewed with islands, he must have been obliged to give up all the other objects of his expedition, and formally disobeyed his instructions.

The honour of having achieved a perfect description of the habitable parts of the globe will be reserved for the nineteenth century. Then the important question respecting a communication of the two seas by the north of America will be decided. Let us reserve a place for the immortal name of that enterprising navigator, who, availing himself of the progress of astronomical knowledge, shall show us this communication.

To accelerate the arrival of this era, let all discouraging doubts be rejected, and let me add a word or two to what I have already said in the notes to pages 258, and 357.

The ship *Padre Eternal*, commanded by captain David Melguer, a Portuguese, sailed from Japan

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about the year 1660, and ran as far north as about the latitude of 84° , whence she steered her course between Spitzbergen and Greenland, and, passing to the westward of Scotland and Ireland, returned to Oporto in Portugal. 1786. September.

Captain Vannout, a Dutchman, asserts, that he sailed into the South Sea through Hudson's Strait.

I would intreat those, who turn their thoughts to this question, to read the collection of observations on the probability of a north-west passage, inserted in the voyages of captain Meares. (French Editor.)

CHAPTER XI.

Description of Monterey Bay—Historical Details respecting the two Californias and their Missions—Manners and Customs of the converted and the independent Natives—Grain, Fruits, and Vegetables of every kind—Quadrupeds, Birds, Fishes, Shells, &c.—Military Constitution of these two Provinces—Account of their Trade, &c.

1786. MOUNTEREY BAY (*Charts and Plates, N° 34*), formed by New-
 September. Year's Point to the north, and Point Cyprus to the south, presents an opening of eight leagues in this direction, and nearly six in depth to the eastward, where the land is low and sandy. The sea rolls to the foot of the sandy downs which border the coast, and produces a noise, which we heard when more than a league distant. The lands to the north and south of this bay are elevated, and covered with trees. Vessels intending to stop here must follow the southern shore, and when they have doubled the Point of Pines, which projects to the north, the presidency appears in view, and they may come to an anchor in ten fathoms of water, within and rather near to the point, which shelters them from the winds of the sea. The Spanish vessels which make a long stay at Monterey usually approach so near the shore as the distance only of one or two cables lengths, and moor in six fathoms of water, by making fast to an anchor, which they bury in the sand on the beach. They have then nothing to fear from the south winds, which are sometimes strong, but not at all dangerous, as they blow from the coast. We had soundings in every part of the bay, and anchored at the distance of four leagues from the shore, in sixty fathoms, soft mud; but as the sea is heavy, it is not possible to remain in this situation longer than a few hours, while waiting for day or the clearing up of the fog. The time of high water at full and change of the moon is at half past one. The tide rises seven feet, but as the bay is very open, the current is almost

imperceptible. I never saw it run so rapidly even as half a knot. It is 1786.
impossible to describe either the number of whales with which we were September.
surrounded, or their familiarity. They blew every half minute within
half a pistol-shot from our frigates, and occasioned a most annoying stench.
We were unacquainted with this property in the whale; but the inhabi-
tants informed us, that the water thrown out by them is impregnated with
this offensive smell, which is perceived to a considerable distance; and to
the fishermen of Greenland or of Nantucket, this would probably have been
no new phenomenon.

Almost incessant fogs envelope the coasts of Monterey Bay, which
renders the approach somewhat difficult. But for this circumstance
there would scarcely be a safer shore. No concealed rock extends farther
than a cable's length; and if the fog be too thick, it is easy to anchor and
wait for it's clearing up, when the Spanish settlement is seen in the angle
formed by the southern and eastern shores.

The sea was covered with pelicans. It appears that these birds never
fly to a greater distance than five or six leagues from the land, and navigators
who meet with them during a fog may be certain of being no further
distant from it. We saw them for the first time in Monterey Bay, and I
have since been informed that they are common over the whole coast of
California. The Spaniards call them *alkatræ*.

A lieutenant colonel, who resides at Monterey, is governor of both
Californias. His government is more than eight hundred leagues in cir-
cumference; but his real subjects consist only of two hundred and eighty-
two cavalry, who form the garrison of five small forts, and furnish detach-
ments of four or five men to each of the twenty-five missions or parishes
into which Old and New California are divided. These slender means
are sufficient to secure the obedience of about fifty thousand wandering *
Indians in this extensive part of America, of whom nearly ten thousand

* They continually change their residence, according as it is the season of fishing or of hunting.

1786. have embraced Christianity. These Indians are in general diminutive and
 September. weak, and exhibit none of that love of independance and liberty which characterise the nations of the north, of whom they possess neither the arts nor the industry. Their colour nearly approaches that of the negroes whose hair is not woolly. The hair of the Californians is very strong, and would grow to a considerable length; but they cut it off at about four or five inches from the root. Many of them have beards; while others, according to the missionaries, have never had any; and it is a question which is not even decided in the country itself *. The governor, who had been a great traveller into the interior of the land, and for fifteen years had resided among these savages, assured us, that those who appeared without beards had plucked them out with the bivalve shells, which they use as tweezers. The president of the missions, who has resided nearly the same time in California, maintained the contrary opinion, and it must be difficult for a stranger to decide between them. Obligated however to relate precisely what we have seen, we are under the necessity of admitting, that we observed beards only on about half the adults; and of these some were of so respectable an appearance, that they might have claimed distinction in Turkey, or in the vicinity of Moscow †.

These Indians are extremely skilful with the bow, and killed before us the smallest birds. It is true that their patience in approaching them is inexpressible. They conceal themselves, and slide in a manner after their game, seldom shooting till within fifteen paces.

Their industry in hunting larger animals is still more admirable. We saw an Indian with a stag's head fastened on his own, walking on all-fours, and pretending to graze; and he played this pantomime with such truth, that our hunters, when within thirty paces, would have fired at him, if they

* We have given our opinion respecting the beards of the Americans in the preceding chapter; but we write these chapters during the voyage, and as we have no system to maintain, we do not hesitate to relate new facts as they come to our knowledge.

† As the governor had travelled over a much greater extent of country than the missionary, his opinion would have predominated with me, if I had been obliged to decide the question.

had not been forewarned. In this manner they approach a herd of deer within a short distance, and kill them with their arrows. 1786.
September.

Loretto is the only presidio of Old California, on the eastern coast of this peninsula. The garrison consists of fifty-four horsemen, who afford small detachments to the fifteen following missions, the duties of which are performed by Dominicans, who have succeeded the Jesuits and Franciscans. Of the ten missions of New California these last have remained sole possessors. The fifteen missions of the department of Loretto are *San Vicente, San Domingo, el Rosario, San Fernandez, San Francisco de Borgia, Sta Gertrude, San Ignacio, la Guadalupe, Sta Rosalia, la Concepcion, San Josef, San Francisco Xavier, Loretto, San Josef de Cabo Lucar, and Todos Santos*. About four thousand Indians, converted and assembled in these fifteen parishes, are the whole fruit of the long apostleship of the different religious orders, who have succeeded each other in this painful ministry. The epoch of the establishment of Fort Loretto, and the different missions which it protects, may be read in the History of California, by father Venegas. By comparing their former situation with that of the present year, it will be seen, that the progress of these missions, both temporal and spiritual, is extremely slow. As yet there is but one place inhabited by Spaniards. The country, it is true, is unwholesome, and the territory of the province of Sonora, which borders upon the Vermillion Sea to the east, and California to the west, much more attractive, since they find there a fertile soil and productive mines; objects in their eyes of much greater value than the pearl-fishery of the peninsula, which requires a certain number of divers, which it is often difficult to procure. But northern California, notwithstanding its great distance from Mexico, appears to me to unite infinitely more advantages. Its first establishment, which is San Diego, bears no earlier date than the 26th of July, 1769. It is the presidio furthest to the south, as San Francisco is farthest to the north. This last was built the 9th of October, 1776; that of the channel of *S^{ta} Barbara* in September, 1786; and, lastly, Monterey, at present the capital and chief place of the two Californias, on the 3d of June, 1770. The road of this presidio was discovered in

1786. 1602 by Sebastian Viscayno, commander of a small armed squadron at September. Acapulco, by order of viscount de Monterey, viceroy of Mexico. Since that time the galleons, on their return from Manilla, have sometimes put into this bay, to procure refreshment after their long passage; but it was not till 1770 that the Franciscans established their first mission here. They have ten at present, in which they reckon five thousand one hundred and forty-three Indians converted. The four following columns will shew the name of the parish, the date of the establishment, the presidio on which each parish depends, and the number of converts. The Spaniards give the name of *presidio* generally to all their forts, as well in Africa as in America, situate in infidel countries; and the term implies that there are no inhabitants, but simply a garrison residing in the citadel.

Names of parishes.	Names of presidios on which they depend.	Date of their establishment.	Number of individuals converted.
San Carlos -	Monterey	June 3, 1770	711
San Antonio	Idem	July 14, 1771	850
San Louis -	Idem	Sept. 1, 1772	492
S ^{ta} Clara -	San Francisco	Jan. 18, 1777	475
San Francisco	Idem	Oct. 9, 1776	250
San Bueneventura	S ^{ta} Barbara	May 3, 1782	120
S ^{ta} Barbara -	Idem	Sept. 3, 1786	—
San Gabriel -	Idem	Sept. 8, 1771	843
San Juan Capistran	San Diego	Nov. 1, 1776	544
San Diego -	Idem	July 26, 1769	858
			5143

The piety of the Spaniards has hitherto maintained these missions and presidios at a great expence, with the sole view of converting and civilising the Indians; a system much more worthy of praise than that of those avaricious individuals, who appeared to be invested with the national authority for no other purpose than to commit with impunity the most atrocious barbarities. The reader will soon perceive that a new branch of commerce may procure to the Spanish nation greater advantages

than the richest mine of Mexico; and that the salubrity of the air, the fertility of the soil, and the abundance of every kind of peltry, for which China is a certain market, afford to this part of America incalculable advantages over old California, of which the unhealthiness and sterility can never be compensated by a few pearls, which must be industriously sought for at the bottom of the sea.

Before the arrival of the Spaniards, the Indians of California cultivated nothing but a small quantity of maize, and subsisted almost entirely by fishing and hunting. No country is more abundant in fish and game of every description. Hares, rabbits, and deer, are extremely common; seals and otters as abundant as in the more northern parts, and in the winter they kill a great quantity of bears, foxes, wolves, and wild cats. The coppices and plains are covered with small grey crested partridges, which live in society like those of Europe, but in covies of three or four hundred. They are fat and excellent (*Charts and Plates, No. 36*). The trees are inhabited by the most charming birds. Our ornithologists stuffed several varieties of sparrows, blue jays, titmice, speckled wood peckers, and troupiales*. Among the birds of prey we observed the white-headed eagle, the large and small falcon, the goss hawk, the sparrow hawk, the black vulture, the large owl, and the raven. In the ponds and on the sea-coast are found the duck, the grey and white pelican with yellow tufts, different species of gulls, cormorants, curlews, ring plovers, small water hens and herons; and, lastly, we killed and stuffed a bee-eater (*Charts and Plates, No. 37*), which ornithologists have supposed to be peculiar to the old continent.

The soil likewise is inexpressibly fertile. Every kind of garden plants thrives astonishingly. We enriched the gardens of the governor and the missions with different grains which we had brought from Paris, which

* The *oriolus icterus* Lin. called by Latham the *icteric oriole*, and by Catesby the *yellow and black pyc*. T.

1786. were in perfect preservation, and will add to the sum of their domestic
September. enjoyments.

The crops of maize, barley, wheat and pease, can only be compared to those of Chili. Our European cultivators can form no conception of so abundant a fertility. The medium produce of wheat is seventy or eighty for one, and the extremes sixty and a hundred. Fruit-trees are still very scarce, but the climate is extremely proper for their cultivation, and differs little from the southern provinces of France; at least the cold is never more intense, while the heats of summer are much more moderate, on account of the continual fogs which prevail in these countries, and communicate a degree of humidity very favourable to vegetation.

The forest trees are the stone-pine, the cypress, the evergreen oak, and the occidental plane-tree. They stand apart from each other without underwood, and a verdant carpet, over which it is pleasant to walk, covers the ground. There are vacant places, several leagues in extent, forming vast plains, covered with all sorts of game. The land, though very productive, is sandy and light, and owes its fertility I conceive to the humidity of the air, for it is badly watered. The nearest running stream to the presidio is two leagues distant: it is a brook that flows near the mission of San Carlos, and is called by the ancient navigators Rio de Carmel. This distance was too great to allow us to fetch our water from thence, and we procured it from ponds behind the fort, where it was of a very indifferent quality, scarcely dissolving soap. The river Carmel, which affords a wholesome and agreeable drink to the missionaries and their Indians, might also with a little trouble water their gardens.

It is with the most pleasing satisfaction that I speak of the pious and prudent conduct of these religious men, which so perfectly accords with the object of their institution. I shall not conceal what I conceived to be blameable in their internal administration; but I must affirm, that, individually good and humane, they temper by their mildness and charity the austerity of the rules which have been prescribed by their superiors. A

friend to the rights of men rather than to theology, I could have wished, 1786.
I confess, that there had been joined to the principles of christianity a le- September.
gislation, which might gradually have made citizens of men, whose state
at present scarcely differs from that of the negro inhabitants of our colo-
nies, at least in those plantations which are governed with most mildness
and humanity.

I am perfectly aware of the extreme difficulty of this new plan. I know that these men have very few ideas, and still less constancy, and that if they were to cease to be treated as children, they would escape from those who have taken the pains to instruct them. I know likewise, that reasoning can produce very little effect upon them, that it is absolutely necessary to appeal to their senses, and that corporeal punishment, with rewards in a double proportion, have hitherto been the only means adopted by their legislators. But would it not be possible for ardent zeal and extreme patience to demonstrate to a few families the advantages of society, founded on the rights of the people; to establish among them the possession of property, so bewitching to all men; and by this new order of things to engage every one to cultivate his field with emulation, or to direct his exertions to some other employment?

I admit that the progress of this new civilisation would be very slow, and the attentions necessary to be paid tedious and disgusting; that the theatre of action is very remote, and that the applauses of the enlightened part of mankind would never reach the ear of him who should thus have consecrated his life to deserve them. Neither do I hesitate to affirm, that human motives are insufficient for such a ministry, and that the enthusiasm of religion, with the rewards it promises, can alone compensate for the sacrifices, the disgust, the fatigues, and the dangers of this kind of life. Still I could wish that the minds of the austere, charitable, and religious individuals I have met with in these missions, were a little more tinctured with the spirit of philosophy.

I have already expressed my opinion with freedom respecting the

1786. monks of Chili, whose irregularity appeared to me in general to be scandalous *. With the same freedom I shall pourtray these truly apostolical tribes, who have abandoned the indolent life of a cloister to deliver themselves up to fatigues, cares, and solitudes of every kind. According to my custom I shall proceed with our own history while I relate theirs, and place before the eyes of the reader what we saw and learned during our short stay at Monterey.

We anchored on the 14th of September in the evening, two leagues from the shore, in sight of the presidio, and of two vessels which were in the road. They had fired guns every quarter of an hour to direct us to the anchorage, which they conceived might be concealed from us by the fog. At ten in the evening, the captain of the corvette *La Favorita* came on board in his long-boat, and offered to pilot our vessels into the port. The corvette *La Princesa* had likewise sent a pilot on board the *Astrolabe*. We learned, that these two vessels were Spaniards, commanded by Don Estevan Martinez, lieutenant of a frigate in the department of St Blas, in the province of Guadalaxara. The government maintains a small marine force in this port, subject to the orders of the viceroy of Mexico. It consists of four corvettes of twelve guns, and a schooner, the particular destination of which is the supply of the presidios of northern California with provisions. These are the same vessels which made the two last expeditions of the Spaniards on the north-west coast of America; and they are sometimes sent as packet-boats to Manilla, for the more speedy transmission of the orders of the court.

At ten in the morning we weighed and anchored in the road at noon. We were saluted with seven guns, which we returned, and I sent an officer to the governor with the letter of the Spanish minister, which had been forwarded to me in France before my departure. It was not sealed, and was addressed to the viceroy of Mexico, whose authority extends to

* There are monks, however, of merit in Chili; but in general they enjoy a degree of liberty contrary to the state they have embraced.

Monterey, though at the distance of eleven hundred leagues by land from the capital. 1786.
September.

M^r Fages, commandant of the fort of the two Californias, had already received orders to afford us the same reception as to the vessels of his own nation; and he executed these orders with a degree of earnestness and benevolence which deserve our warmest acknowledgments. He did not confine himself to mere verbal politeness. Cattle, garden-stuff, and milk, were sent on board in abundance. The desire of serving us seemed even to disturb the harmony between the commander of the two vessels and the chief of the fort. Each was desirous exclusively of providing for our wants; and when the account was to be discharged we were obliged to insist on their receiving our money. The garden-stuff, milk, poultry, and the assistance of the garrison in wooding and watering, were afforded gratis; and the cattle, sheep, and corn were charged at so low a price, that it was evident an account had been presented to us merely because we had insisted upon it.

To these generous proceedings of M^r Fages the utmost politeness was added. His house was our home, and all his people were at our disposal.

The fathers of the mission of San Carlos, at the distance of two leagues from Monterey, soon arrived at the presidio. No less obliging than the officers of the two vessels and the fort, they invited us to dine with them, and promised to inform us minutely concerning the government of their missions, the manner of living of the Indians, their arts, their newly-acquired habits, and in general every thing that could interest the curiosity of travellers. We eagerly accepted this invitation, which we should not have failed to solicit if we had not thus been anticipated. It was agreed that, we should set out the day after the morrow. M^r Fages was desirous of accompanying us, and undertook to procure us horses. After crossing a small plain, covered with herds of cattle, and in which there were a few trees only, which were necessary to shelter these animals against the rain and the sun, we ascended the hills, from whence we heard the sound of

1786. bells announcing our arrival, of which the missionaries had been previously
September. informed by a horseman from the governor. We were received like the lords of manors when they first take possession of their estates. The president of the missions, in his ceremonial habiliments and with his holy-water sprinkle in his hand, awaited us at the gate of the church, which was illuminated in the same manner as on the greatest festivals. He conducted us to the foot of the high altar, where he chaunted the *Te Deum* in thanksgivings for the happy success of our voyage.

Before we entered the church, we had passed through a square in which the Indians of both sexes were ranged in a line. They exhibited no marks of surprise in their countenance, and left us in doubt whether we should be the subject of their conversation for the rest of the day. The church is neat though thatched with straw. It is dedicated to St Charles, and adorned with some tolerable pictures, copied from originals in Italy. Among the number is a picture of hell, in which the painter appears to have borrowed from the imagination of Callot; but as it is absolutely necessary to strike the senses of these new converts with the most lively impressions, I am persuaded that such a representation was never more useful in any country; and that it would be impossible for the protestant worship, which proscribes images, and almost all the ceremonies of our church, to make any progress with this people. I doubt whether the picture of paradise, which is opposite to that of hell, produces so good an effect upon them. The state of tranquillity which it represents, and that mild satisfaction of the elect who surround the throne of the supreme being, are ideas too sublime for the minds of uncultivated savages: but it was necessary to place rewards by the side of punishment, and it was a point of duty that no change should be permitted in the kind of enjoyments which the Catholic religion promises to man.

On coming out of the church we passed through the same row of Indians, whom the *Te Deum* had not induced to abandon their post. The children only had removed to a small distance, and formed groups near the house of the missionaries, which, as well as the different store-houses, is

opposite the church. The Indian village stands on the right, consisting of about fifty huts, which serve for seven hundred and forty persons of both sexes, including their children, who compose the mission of San Carlos, or of Monterey. 1786. September.

These huts are the most wretched that are any where to be met with. They are round, and about six feet in diameter and four in height. Some stakes of the thickness of a man's arm, stuck in the ground and meeting at the top, compose the framing. Eight or ten bundles of straw, ill-arranged over these stakes, are the only defence against the rain; and when the weather is fine, more than half the hut remains uncovered, with the precaution, however, of two or three trusses of straw to each habitation, to be used as circumstances may require.

This general architecture of the two Californias has never undergone the smallest change, notwithstanding the exhortations of the missionaries. The Indians say, that they love the open air, that it is convenient to set fire to their house when the fleas become troublesome, and that they can build another in less than two hours. The independent tribes, who, as hunters, so frequently change their residence, have of course an additional motive.

The colour of these Indians, which is that of negroes; the house of the missionaries; their store-houses, which are built of brick, and plastered; the appearance of the ground on which the grain is trodden out; the cattle; the horses; every thing, in short, brought to our recollection a plantation at St. Domingo or any other West-India island. The proselytes are collected by the sound of a bell; a missionary leads them to work, to the church, and to all their exercises. We observed with concern, that the resemblance is so perfect that we have seen both men and women in irons, and others in the stocks*; and, lastly, the noise of the whip might have struck our ears, this punishment also being admitted, though exercised with little severity.

* *Au bloc*. The author has given a description of this implement in a note, which we do not copy, because it is precisely designated by the English word in the text. T.

1786. The monks, by their answers to our different questions, left us ignorant
 September. of no part of the government of this religious community; for no other name can be given to the legislation they have established. They are the temporal as well as the spiritual governors, the products of the earth being entrusted to their care. The day consists in general of seven hours labour, and two hours prayer; but there are four or five hours prayer on Sundays and festivals, which are entirely consecrated to rest and divine worship.

Corporal punishment is inflicted on the Indians of both sexes who neglect the exercises of piety, and many sins, which are left in Europe to the divine justice, are here punished by irons and the stocks. And lastly, to complete the similitude between this and other religious communities, it must be observed, that the moment an Indian is baptised, the effect is the same as if he had pronounced a vow for life. If he escape, to reside with his relations in the independent villages, he is summoned three times to return, and if he refuse, the missionaries apply to the governor, who sends soldiers to seize him in the midst of his family*, and conduct him to the mission, where he is condemned to receive a certain number of lashes, with the whip. These people have so little courage, that they never make any resistance to the three or four soldiers who so evidently violate the rights of men in their persons; and this custom, against which reason so strongly exclaims, is kept up, because theologians have decided, that they could not in conscience administer baptism to men so inconstant, unless the government would in some measure serve as their sponsor, and answer for their perseverance.

The predecessor of Mr Fages, Mr Philip Deneve, commander of the interior provinces of Mexico, who died about four years ago, a man replete with humanity, and a Christian philosopher, remonstrated against the practice. He thought, that the progress of the faith would be more rapid, and the prayers of the Indians more agreeable to the supreme being, if they were not constrained. He was desirous of a constitution less monastic,

† As these people are at war with their neighbours, they can never escape to a greater distance than twenty or thirty leagues.

affording more civil liberty to the Indians, and less despotism in the executive power of the presidios, the government of which might be entrusted to cruel and avaricious men. He thought likewise, that it might perhaps be necessary to moderate their authority by the appointment of a magistrate, who might be the tribune, as it were, of the Indians, and possess sufficient authority to defend them from vexations. This upright man had borne arms in favour of his country from his infancy; but he was exempt from the prejudices of his profession, and well knew, that military government is subject to great inconveniences, when moderated by no intermediate power. He might, however, have experienced the difficulty of maintaining the conflict of three authorities, in a country so remote from the governor-general of Mexico, since the missionaries, though so pious and respectable, are already at open variance with the governor, who, on his part, appears to me to be a worthy military character.

We were desirous of being present at the distributions made at each meal; and as all the days, with this kind of religious community, were exactly alike, by the recital of the proceedings of one, the reader will be acquainted with the history of a whole year.

The Indians, as well as the missionaries, rise with the sun, and immediately go to prayers and mass, which last for an hour. During this time three large boilers are set on the fire for cooking a kind of soup, made of barley meal, the grain of which has been roasted previous to its being ground. This sort of food, of which the Indians are extremely fond, is called *atole*. They eat it without either butter or salt, and it would certainly to us be a most insipid mess.

Each hut sends for the allowance of all its inhabitants in a vessel made of the bark of a tree. There is neither confusion nor disorder in the distribution; and when the boilers are nearly emptied, the thicker portion at the bottom is distributed to those children who have said their catechism the best.

The time of repast is three quarters of an hour; after which they all go

1786. to work, some to till the ground with oxen, some to dig in the garden,
September. while others are employed in domestic occupations, and all under the eye
of one or two missionaries.

The women have no other employment than their household affairs, the care of their children, and the roasting and grinding of the corn. This last operation is both tedious and laborious, because they have no other method of breaking the grain than with a roller upon a stone. Mr de Langle, who saw this operation, made a present of his mill to the missionaries; and it was difficult to have rendered them a greater service, since four women will now do the work of a hundred; and they will have time to spin the wool of their sheep, and manufacture some coarse cloths. But the missionaries have hitherto been more attentive to their heavenly than their earthly concerns, and have greatly neglected the introduction of the most common arts. They are so austere as to their own comforts, that they have no fire-place in their chambers, though the winter is sometimes severe: the greatest anchorites have never lived a more edifying life *.

At noon the bells give notice of the time of dinner. The Indians then quit their work, and send for their allowance in the same vessel as at breakfast. But this second soup is thicker than the former, and contains a mixture of wheat and maize, and peas and beans: the Indians call it *poussole*. They return to work from two to four or five o'clock, when they repair to evening prayer, which continues nearly an hour, and is followed by a distribution of *atole*, the same as at breakfast. These three distributions are sufficient for the subsistence of the greater number of these Indians, and we might perhaps adopt this economical food in years of scarcity, with the addition of some seasoning. The whole art of this cookery consists in roasting the grain before it is reduced to meal. As the Indians have no earthen or metallic vessels for this operation, they

* Father Firmin de la Suen, president of the missions of New California, is one of the most worthy and respectable men I have ever met with. His mildness, charity, and affection for the Indians, are beyond expression.

perform it in baskets of bark, over a gentle charcoal fire. They turn these vessels with such address and rapidity, that they succeed in causing the grain to swell and burst without burning the basket, though made of so combustible a material; and we can affirm, that our best coffee is far from being roasted with equal skill. It is distributed to them every morning, and the slightest embezzlement is punished by the whip; though it seldom happens that they expose themselves to the danger. These punishments are adjudged by Indian magistrates, called *caciques*. There are three in each mission, chosen by the people from among those whom the missionaries have not excluded: to give, however, a proper notion of this magistracy, we must observe, that these *caciques* are like the overseers of a plantation, passive beings, blind performers of the will of their superiors; and that their principal functions consist in serving as beadles in the church, to maintain order and the appearance of attention. Women are never whipped in public, but in an inclosed and somewhat distant place, that their cries may not excite a too lively compassion, which might cause the men to revolt. The latter, on the contrary, are exposed to the view of all their fellow citizens, that their punishment may serve as an example. They usually ask pardon for their fault, in which case the executioner diminishes the force of his lashes, but the number is always irrevocable.

The rewards are small distributions of grain, of which they make little thin cakes, and bake them on the hot wood ashes. On high festivals an allowance of beef is distributed, which many eat raw, particularly the fat, which is considered by them as equally delicious with the finest butter or the most excellent cheese. They skin all animals with the greatest dexterity; and when they are fat they make, like the ravens, a croaking of pleasure, devouring with their eyes those parts for which they have the greatest avidity.

They are often permitted to hunt and fish for their own benefit; and upon their return they generally make a present to the missionaries of a part of their sport; but they proportion the quantity to what is strictly necessary for their consumption, taking care however to increase it, when

1786.
September.

1786. they know that their superiors have any visitors or guests. The women
September. raise some poultry about their huts, the eggs of which they give to their children. These fowls are the property of the Indians, as well as their clothes and other small articles of furniture and implements of hunting. There is no example of theft among them, though the door of their hut consists merely of a bundle of straw, which they place across the entrance when the inhabitants are absent.

These manners may appear patriarchal to some of our readers, who may not reflect, that in these huts there is no article which can excite the avarice of a neighbouring hut. The food of the Indians is secured to them, and they have therefore no other want than that of giving life to beings, who are sure to be as stupid as themselves.

The men in these missions have made greater sacrifices to Christianity than the women, because, before it's introduction, they were accustomed to polygamy, and were even in the habit of espousing all the sisters of the same family. The women, on the contrary, have acquired the right of receiving exclusively the caresses of a single man. I must confess, however, notwithstanding the unanimous report of the missionaries concerning this pretended polygamy, that I am at a loss to conceive how it could have been established in a nation of savages; for the number of men being nearly equal to that of the women, the consequence must have been a forced continence in many individuals, unless conjugal fidelity were less rigorously observed than in the missions, where the holy fathers have constituted themselves guardians of the virtue of the sex. An hour after supper, they take care to secure all the women whose husbands are absent, as well as the young girls above the age of nine years, by locking them up; and during the day they entrust them to the care of elderly women. All these precautions are still inadequate, and we have seen men in the stocks, and women in irons, for having eluded the vigilance of these female Arguses, whose eyes are not sufficient for the complete performance of their office.

The converted Indians have preserved all the ancient customs which their new religion does not prohibit: they have the same huts, the same diversions, and the same clothes. The cloathing of the richest consists in a garment of otter's skin, which descends from the waist somewhat lower than the groin. The most indolent have simply a piece of cloth, which the mission supplies, to cover the nudities, and a small cloak of rabbit skin, tied under the chin, which covers their shoulders, and descends to their waist. The rest of their body is absolutely naked, as well as their head. Some of them, however, have straw hats, which are neatly made.

The cloathing of the women is a mantle of deer skin badly tanned. Those of the missions have generally a small corset with sleeves, which, with a small apron of rushes, and a petticoat of deer-skin descending to the middle of the leg, is the whole of their dress. Young girls more than nine years of age have simply a cloth round their waist, and the children of both sexes are entirely naked.

The hair both of men and women is cut to the length of about four or five inches. The Indians of the *rancheries* *, having no instruments of iron, perform this operation with lighted fire-brands. They are likewise in the habit of painting their bodies red, in general, and when they are in mourning, in black. The missionaries have forbidden the first of these paintings; but they are obliged to tolerate the other, because these people are so strongly attached to their friends. When they are called to their remembrance they shed tears, though they may have lost them for a considerable period; and if their name be mentioned by any one, even through inadvertence, they consider it as an offence. The bonds of relationship have less force with them than those of friendship. Children take scarcely any notice of their father. They abandon his hut as soon as they are capable of providing for their subsistence; but they preserve a longer attachment for their mother, who has brought them up with extreme mildness.

* Name of the independent Indian villages.

1786. and has never beaten them, unless when they have shown cowardice in their
September. combats with children of the same age.

The old men of the rancheries, who are no longer able to hunt, are supported at the expence of their whole village, and are in general well respected. The independent savages are frequently at war; but the fear of the Spaniards causes them to respect the missions, and this perhaps is not the smallest of the inducements which increase the Christian villages. Their arms are the bow and arrow, which is armed with a flint very skillfully wrought. The bows, which are wood and strung with the tendon of an ox, are very superior to those of the inhabitants of *Port des Français*.

We were assured, that they neither eat their prisoners, nor their enemies slain in war; that nevertheless, when they have vanquished and killed the chiefs, or bravest men, on the field of battle, they devour some small portions, less in token of hatred or vengeance, than as an homage due to their valour, and from the persuasion that this food is calculated to increase their courage. Like the Canadians, they scalp the vanquished, and take out their eyes, which they have the art of preserving from corruption, and which they carefully keep as tokens of victory. They burn their dead, and deposit their ashes in morais.

They have two kinds of game, in which they employ their whole leisure: the first, to which they give the name of *takersia*, consists in throwing a small hoop, of three inches in diameter, and causing it to roll in a space of twenty feet square, cleared of grass and surrounded with stakes. The two players hold each a stick, of the thickness of a common cane, and five feet long. This stick they endeavour to strike through the small hoop, while it is in motion. If they succeed, they gain two points; and if the hoop should stop, so as to lie upon the stick, they reckon but one. The game is three. This diversion affords a violent degree of exercise, because the hoop or the stick is always in action.

The other game, named *toussi*, is more tranquil. It is played by four persons, two on each side. Each, in his turn, conceals in one of his hands a piece of wood, while his partner makes a thousand gestures to occupy the attention of the adversaries. It is curious enough to a bystander to see them squatted down opposite each other, keeping the most profound silence, observing the traits of the countenance and the most minute circumstances, which may assist their conjecture as to the hand which conceals the piece of wood. They gain or lose a point accordingly as their guess is right or wrong; and those who gain it have a right to hide in their turn. The game is five points, and the usual stake glass beads, and with the independent Indians the favours of their women. These Indians have no knowledge of a God, or of a future state, with the exception of some nations to the south, who had a confused notion of this kind before the arrival of the missionaries. They placed their paradise in the middle of the sea, where the elect were to enjoy cool breezes, which never prevail on their burning sands; and they supposed hell to be in the cavities of their mountains.

The missionaries, persuaded from their prejudices and perhaps from their experience, that the reason of these men is scarcely ever developed, which they consider as a just motive for treating them like children, admit only a very small number to the communion. These are the geniuses of the country, who, like Descartes and Newton, would have enlightened their age and countrymen, by teaching them that four and four make eight, which is a calculation beyond the reach of the greatest number of them. The plan pursued by these missionaries is little calculated to remove this state of ignorance, in which every thing is directed to the recompenses of another life; while the most usual arts, not excepting even the surgery of our villages, are not exercised. Many children perish in consequence of ruptures, which the slightest skill would cure; and our surgeons had the pleasure of relieving a small number, and of showing them how to apply the necessary bandages.

It must be confessed, that if the Jesuits were neither more pious nor more

1786. ~~September.~~ charitable than these missionaries, they were at least more intelligent and skilful. The immense edifice which they have raised at Paraguay cannot fail to excite admiration; but their ambition and prejudices have afforded matter for the strongest disapprobation, in their system of community of property, so contrary to the progress of civilisation, and which is imitated with too much servility in the missions of California. This government is a true theocracy for the Indians, who believe, that their superiors have immediate and continual communication with God, and that they cause him to descend every day on the altar. By virtue of this opinion, the holy fathers live in the midst of the villages with the greatest security. Their doors are not shut, even in the night, though the history of their mission affords the example of a missionary slain. It is known, that this assassination was the consequence of a commotion occasioned by an act of imprudence; for homicide is a very rare crime, even among the independent Indians. It is, however, no otherwise revenged than by general contempt; but if a man fall beneath the blows of a considerable number, it is concluded, that he deserved his fate, since his conduct produced such a number of enemies.

Northern California, of which the most northerly settlement is that of San Francisco, in latitude $37^{\circ} 58'$, has no other boundary, according to the opinion of the governor of Monterey, than that of America; and our vessels, by penetrating as far as Mount St. Elias, did not reach it's limits. To the motives of piety, which have determined Spain to sacrifice considerable sums for the support of it's presidios and missions, there are at present considerable reasons of state to be added, which may direct the attention of government to this valuable part of America, where the sea otter skins are as common as in the Aleutian Islands, and those of the other seas frequented by the Russians.

We found at Monterey a Spanish commissary, M^r Vincent Vassadre y Vega, who had brought orders to the governor, enjoining him to collect all the sea otter skins of his four presidios and the ten missions, of which the government reserves to itself the exclusive commerce. M^r Fages

assured me, that fifty thousand might be collected annually; and as he was well acquainted with the country, he added, that if the China trade could furnish a demand for thirty thousand skins, two or three settlements to the north of San Francisco would soon procure them for the commerce of his nation. 1786. September.

It is perfectly unaccountable that the Spaniards, having so near and so frequent intercourse with China from Manilla, should have been hitherto ignorant of the value of this precious trade of furs.

It is to captain Cook, and the publication of his work, that they are indebted for this dawn of information, which will procure them the greatest advantages. This great man has thus travelled for the benefit of all nations, and his own country derives no greater advantage above others, but the glory of the enterprize and of reckoning him among her sons.

The sea otter is an amphibious animal as common along the whole occidental coast of America, from the 28th to the 60th degree of north latitude, as the seal on the coast of Labrador and in Hudson's bay. The Indians who are by no means so expert seamen as the Esquimaux, and whose boats at Monterey are only made of reeds*, catch them either on shore with snares, or kill them with large sticks, when they find them at a distance from the sea. For this purpose they conceal themselves behind the rocks, this animal being frightened at the least noise, and plunging immediately into the water. Before the present year, the skin of an otter bore no higher value than two hare skins. The Spaniards, never suspecting there could be any demand for them, had not sent any to Europe, and Mexico was too hot a country for them to suppose, that this article could be acceptable there.

I am of opinion, that in few years a great revolution will take place in the commerce of the Russians at Kiatcha, from the difficulty of supporting

* The inhabitants of the missions of S^{ta} Barbara and San Diego have wooden canoes, constructed nearly in the same manner as those of the inhabitants of Mowee, but without out-riggers.

1786. this competition. From the comparison I have made of the sea otter skins
September. of Monterey with those of Port des Français, I am inclined to believe, that the skins of the south are rather inferior; but the difference is so small, that I am not absolutely certain of this inferiority, and I doubt whether it may make in the sale a difference of ten per cent. It is almost certain, that the new company of Manilla will endeavour to seize this branch of trade; and this would be the most fortunate event which could happen to the Russians, because it is the nature of exclusive privileges to annihilate or at least to paralyse all the branches of commerce and industry, while perfect freedom alone can communicate to both all the activity of which they are susceptible.

New California, notwithstanding its fertility, does not yet possess a single European inhabitant. A few soldiers, who have married Indian women, and either live in the forts, or are scattered in small parties on public service and the different missions, constitute at present the whole of the Spanish nation in this part of America. If it were at a less distance from Europe, it would be in no respect inferior to Virginia, which lies in the same latitude; but its proximity to Asia may well compensate for this, and I am convinced that good laws, and particularly freedom of trade, would soon procure it a certain number at least of inhabitants: for the possessions of Spain are so extensive, that it is impossible to suppose, the population can be considerable for a long time to come in any of her colonies. The great number of individuals of both sexes who, from religious principle, have devoted themselves to celibacy, and the invariable policy of the government to admit but one religion, and to employ the most violent means for supporting it, must constantly oppose a new obstacle to every augmentation.

The government of the villages converted to Christianity would be more favourable to population, if property and a certain degree of liberty constituted its basis. Nevertheless, since the establishment of the ten different missions of Northern California, the fathers have baptised 7701 Indians of both sexes, and buried only 2388. But it must be remarked, that this

computation does not, like those of our European towns, inform us whether the population increases or diminishes, because they are continually baptising independent Indians : it merely shows, that Christianity extends itself; and I have already observed, that the affairs of the next world cannot be placed in better hands. 1786. September.

The Franciscan missionaries are almost all Europeans. They have a college, for so they call a convent at Mexico, of which the general of his order in America is the guardian. This house does not depend upon the provincial of the Franciscans of Mexico, but has its superiors in Europe.

The viceroy is at present the sole judge of every dispute between the different missions, which do not acknowledge the authority of the commandant at Monterey. This officer is merely obliged to supply them with military force when they demand it; but as he has a power over all the Indians, and particularly over those of the rancheries, and has moreover the command of all the detachments of cavalry which reside in the missions, these different relations very frequently disturb the harmony between the military and the religious government; but the last possesses sufficient influence in the mother country in all cases to obtain the ascendancy. These affairs were formerly brought before the governor of the inland provinces; but the new viceroy, Don Bernardo Galves, has united all the powers in his own person.

Spain allows annually four hundred dollars to each missionary, whose number is fixed at two for a parish, and if there be a supernumerary he receives no salary. Money is of very little use in a country where nothing can be purchased. Beads are the only money of the Indians. The college of Mexico therefore never sends a single dollar in cash, but the value in effects, such as tapers for the church, chocolate, sugar, oil, wine, and some pieces of cloth, which the missionaries divide into small girdles to cover what decency does not permit the converted Indians to expose. The governor's pay is four thousand dollars; that of his deputy four hundred and fifty; and that of the captain inspector of two hundred and eighty-

1786. three horsemen, distributed through the two Californias, two thousand.
September. Each horseman receives two hundred and seventeen ; but out of this he is obliged to provide his subsistence, and to furnish himself with a horse, cloathing, arms, and all sorts of necessaries in general. The government, which has horses and cattle, sells to the soldiery both the one and the other. The price of a good horse is eight dollars, and that of an ox, five. The governor has the management of the sales, and at the end of the year he gives an account to each horseman of the balance which may be due to him in money, which he pays with the utmost punctuality.

As the military, of whom there were only eighteen at the presidio, had rendered us many little services, I requested permission to present them with a piece of blue cloth ; and I sent the missions coverlets, stuffs, beads, iron tools and implements, and generally all the small effects which might be necessary to them, and which we had not had occasion to distribute to the Indians at Port des Français. The president informed the whole village, that it was a present from their faithful and ancient allies, who professed the same religion as the Spaniards ; which so particularly excited their benevolence, that the day after each of them brought us a truss of hay or straw, for the cattle and sheep we were about to send on board. Our gardener gave the missionaries some potatoes of Chili in perfect preservation, which in my opinion was not the least valuable of our presents, and which will certainly thrive in the light but fertile soil of the environs of Monterey.

From the day of our arrival we were busily employed in supplying ourselves with wood and water ; and we were allowed to cut the former as near as possible to the place of our landing. Our botanists on their part did not lose a moment in adding to their collection of plants ; but the season was very unfavourable, the heat of the summer having entirely dried them up, and their seed being scattered on the ground. Those which M^r Collignon could distinguish were the common wormwood, sea wormwood, the male southernwood, mugwort, Mexican tea, Canadian goldenrod, the Italian starwort, millefoil, deadly nightshade, spurry, and water

mint. The gardens of the governor and of the missions were filled with an infinity of plants for culinary use, which were furnished us in such abundance, that our people had in no country been better supplied with vegetables.

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Our lithologists were equally zealous with our botanists, but they were still less fortunate. They met with nothing on the mountains, in the ravines, and on the shore, but a light argillaceous stone very easily decomposed, and which is a species of marl. They found likewise blocks of granite, the veins of which contained crystallised feld spar; some rounded fragments of porphyry and jasper; but they observed no trace of metal. Shells are not more abundant, with the exception of some superb heliotes, of which the pearl is of the most beautiful orient. They are even nine inches long and four in breadth. The other shells are not worth enumerating*. The eastern and southern coast of old California are much richer in this part of natural history. They afford oysters containing pearls equal in beauty and magnitude to those of Ceylon, or the Persian Gulph. These would also be an article of great value and certain sale at China; but it is impossible for the Spaniards to give activity to all the means of industry which their country furnishes.

On the 22d in the evening every thing was embarked, and we took leave of the governor and missionaries. We carried away with us as large a store of provisions as when we departed from Conception. The whole stock of poultry of Mr Fages and the missionaries had been transferred into our hencoops, and we were supplied with corn, beans, and pease in such plenty, that they had left themselves scarcely more than was strictly necessary. They refused for a long time to receive any payment, and yielded only to our pressing offers, in consequence of the representation we made to them, that they were the administrators and not the proprietors of the stores of the missions.

22.

* There are also small oviles, whelks, and different sea snails, but they are not at all curious.

1786. On the 23d, the wind was contrary, and in the morning of the 24th,
September. we set sail with a breeze from the west. Don Estevan Martinez had
23. 24. regularly come on board at day-break, and his long-boat and crew were
constantly at our disposal, and had rendered us every assistance. Indeed I can
but feebly express the gratitude we owe him for this estimable conduct, as
well as M^r Vincent Vassadre y Vega, a young man of talents and merit,
who was on the point of repairing to China, to conclude a treaty of com-
merce relative to the trade of otter skins.

CHAPTER XII.

Astronomical Observations—Comparison of the results obtained by the Distances of the Sun and Moon and our Time-keepers, which have served as the Basis of our Chart of the American Coast—Reasons for thinking that our Work is intitled to the Confidence of Navigators—Vocabulary of the Language of the different Nations in the Neighbourhood of Monterey, with Remarks on their Pronunciation.

WHILE our people were employed in collecting the necessary supply of wood and water, Mr Dagelet went on shore with his quadrant, for the purpose of determining the latitude of Monterey with the greatest precision. He regretted, that circumstances did not permit me to remain a sufficient time to resume the comparison of the rate of our time-pieces. The theft of the book of observations by the savages of Port des Français had occasioned some little uncertainty concerning the daily loss of N° 19, by the help of which we had determined all the points of the American coast. This astronomer was even of opinion, that he ought to reject the comparisons made upon Cenotaph Island, and gave the preference to those of the bay of Talcaguana in Chili, though too old perhaps to deserve an entire confidence. But it must not be overlooked, that we every day compared the result of the longitude given by the time-piece, with that obtained from observations of lunar distances made on board each frigate, and that the perfect and constant agreement of these results leaves no doubt as to the accuracy of those on which we have fixed.

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As persons who are minute in their researches may be desirous of knowing the limits of error, of which the determinations of the longitude at sea,

1786. deduced from observations of lunar distances, may be susceptible, it will
September. not be improper to give some account of them.

Theory, assisted by a long course of observations, has hitherto never afforded tables of the lunar motions that are strictly accurate. Nevertheless, considering the degree of precision to which these tables have already arrived, this first source of error cannot leave an uncertainty of more than 40" or 50" of time, at the most, and usually no more than 30", which answer only to a quarter of a degree of geographical longitude: for the mean motion of the moon with regard to the sun is half a minute of a degree for each minute of time, and the minute of time answers to a quarter of a degree of geographical longitude. Whence it follows, that the longitudes deduced from the comparison of the distances observed at sea with the distances calculated for the same periods, and for a determinate meridian, cannot be affected by the error of the tables, if there be an error, to a greater extent than a quarter of a degree in most cases, while it will often be less.

The second source of error is that which arises from the imperfection of the instruments, and the want of accuracy or skill in the observer: but the difference here cannot be ascertained with the same precision as that which results from the error of the tables.

With regard to quadrants and sextants, the limit of error depends, as to the instrument, on the accuracy of the divisions, and as to the observer, first, on the difficulty of verifying the point of 0, and secondly, on that of well observing the contact of the two luminaries, which depends on the excellence of the sight, the experience and the skill of the observer.

The reflecting circles have no cause of error in common with sextants and quadrants, but the difficulty of the observation of the contacts; and they have many advantages over them, which renders their use more certain. The principal of these is, that the error to be feared in the verification is in reality destroyed, because the observations being successively

made in two directions, to the right and the left, this verification may be dispensed with. As to the inaccuracy of the divisions, it is reduced at pleasure by repeating the observations a greater or less number of times; and it depends only on the patience of the observer whether the error arising from it shall not at last be considered as nothing*. After having thus established the limits of error, we are warranted to conclude, that our mean result, for the determination of the longitude by lunar distances, could not in any case have been affected by an error of more than a quarter of a degree; for having constantly employed the reflecting circle; having never neglected in each operation to repeat the observation as often as circumstances would permit, and the observers being also perfectly experienced, we had nothing to fear but the trivial error which might arise from the imperfection of the lunar tables.

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We could therefore employ with certainty the results of these operations, repeated almost daily, to ascertain the regularity of the timekeeper, by comparing them with the result of this instrument. We likewise placed some confidence, and with reason, in the combination and constant agreement of the several results of observations made in different circumstances, and separately, as I have remarked, on board each vessel. And these observations, serving mutually to confirm each other, have afforded a common and incontestable proof of the steady regularity of the timekeeper, N° 19, by the assistance of which we have determined the longitudes of all the points of the American coast that were explored by us. The precautions of every kind which we have multiplied and accumulated, give me the assurance, that our determinations have acquired a degree of precision, which entitles them to the confidence both of navigators and the learned.

The utility of timekeepers at sea is so generally acknowledged, and so clearly explained in the Voyage of M^r de Fleurieu, that we shall speak of

* The sextants we used were made by the English artist Ramsden. The reflecting circles, invented by M^r de Borda, were executed by Lenoir, a French mathematical and astronomical instrument-maker.

1786. the advantages they afforded us, with no other view than to show how far
September. Mr Berthoud has exceeded the limits assigned to his art; since, after a period of eighteen months, his timekeepers N° 18 and 19 have afforded results equally satisfactory with those at our departure, and have permitted us to determine our exact position in longitude several times a day, from which Mr Bernizet has drawn the chart of the coast of America*.

This chart undoubtedly leaves much to be desired with regard to detail: but we can answer for the principal points of the coast, which were determined with precision, as well as for its direction. It appeared in general to be safe, for we saw no breakers in the offing. There may however be shoals near the coast, but we have no reason to presume that this is the case.

Mr de Lamanon, by whom the following notes were written, is of opinion, that it is extremely difficult to give exact vocabularies of the idioms of the different nations in the vicinity of Monterey; and he can only answer for the pains and care he has taken to avoid the adoption of error. He would probably have placed little dependence on his own observations, if he had not found at the mission, where he passed four days, two Indians, who, from their acquaintance with the Spanish language, were of the greatest assistance to him.

I must remark from his observations, that there is no country perhaps where the different idioms are so multiplied as in North California. The numerous hordes which divide it, though very near to one another, live isolated, and have each a particular language. The difficulty of learning them all is some consolation to the missionaries for their inability to under-

* I must remark, that the business of astronomical observations and charts was common to both vessels; and as Mr Monge had quitted us at Teneriffe, Mr de Langle, who is himself a very good astronomer, remained charged with the direction of this labour, in which he was assisted by Messrs Vaujuas, Lauriston, and Blondelas. The latter also drew part of the charts from the observations that were put into his hands.

stand any of them : and for their sermons and death-bed exhortations they are obliged to make use of an interpreter. 1786.
September.

Monterey, and the mission of San Carlos, which is dependent upon it, comprehend the country of the Achastlians and the Ecclemachs. Of the two languages of these people, who are partly united in the same mission, would soon be compounded a third, if the Christian Indians should cease to communicate with those of the rancheries. The language of the Achastlians is adapted to the feeble developement of their understanding. As they have few abstract ideas, they have few words to express them. They did not appear to us to distinguish even all the species of animals by different names. They give the same name, *ouakache*, both to toads and frogs, and they make no difference in the appellations of vegetables which are employed in the same uses. Their epithets to qualify moral objects are mostly borrowed from the sense of taste, which is the sense they are most delighted to gratify. Thus the word *missich* denotes a good man, and savoury food, and the word *keches* a bad man, and meat that is tainted.

They distinguish the plural from the singular ; they conjugate some tenses of verbs, but they have no declensions. Their substantives are much more numerous than their adjectives ; and they never employ the labials F B, nor the letter X. They have the *cbr*, like the inhabitants of Port des Français ; as *cbrskonder*, bird ; *cbruk*, hut ; but their pronunciation is in general softer.

The diphthong *ou* is found in more than half their words ; *chouroui*, to sing ; *touroun*, the skin ; *touours*, the nails ; and the most common initial consonants are T and K. The terminations frequently vary.

They make use of their fingers to count as far as ten ; but few of them can do this from memory, and independently of every external sign. If they wish to express the number which succeeds eight, they begin by counting with their fingers, one, two, &c. and stop when they have pronounced nine. Without this help they can seldom reach as far as five.

1786. Their numerical terms are,
September.

One	-	-	-	<i>moukala.</i>
Two	-	-	-	<i>outis.</i>
Three	-	-	-	<i>apes.</i>
Four	-	-	-	<i>outiti.</i>
Five	-	-	-	<i>is.</i>
Six	-	-	-	<i>étesake.</i>
Seven	-	-	-	<i>kaleis.</i>
Eight	-	-	-	<i>oulousmasakhen.</i>
Nine	-	-	-	<i>pak.</i>
Ten	-	-	-	<i>tonta.</i>

The country of the Ecclemachs extends more than twenty leagues to the eastward of Monterey. The language of its inhabitants is totally different from those of all its neighbours, and has even a greater resemblance to the languages of Europe than to those of America. This grammatical phenomenon, the most curious in this respect which has yet been observed on this continent, will perhaps be interesting to such of the learned who endeavour, from the comparison of languages, to elucidate the history of the transplanting of nations. It appears, that the languages of America have a distinct character, which absolutely separates them from those of the ancient continent. By comparing them with those of Brasil, Chili, and part of California, as well as with the numerous vocabularies given by different travellers, we find that in general the American languages are deficient in several labial letters, and particularly the letter F, which the Ecclemachs employ and pronounce like the Europeans. The idiom of this nation is also richer than that of the other tribes of California, though it cannot be compared with the languages of civilised nations. If these circumstances should lead to the conclusion, that the Ecclemachs are strangers in this part of America, it must be admitted, at least, that they have resided here for a considerable period; for they differ neither in colour, in features, nor in their general make and external appearance, from the rest of the nations in this part of the continent.

VOYAGE ROUND THE WORLD.

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Their numerical terms are,

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September.

One	-	-	-	<i>pek.</i>
Two	-	-	-	<i>oulach.</i>
Three	-	-	-	<i>oullef.</i>
Four	-	-	-	<i>amniabou.</i>
Five	-	-	-	<i>pemaca.</i>
Six	-	-	-	<i>pekoulana.</i>
Seven	-	-	-	<i>boulakoalano.</i>
Eight	-	-	-	<i>koulefala.</i>
Nine	-	-	-	<i>kamakoualane.</i>
Ten	-	-	-	<i>tomoila.</i>

Friend	-	-	-	<i>nigefech.</i>
Bow	-	-	-	<i>pagounach.</i>
Beard	-	-	-	<i>iscotre.</i>
To dance	-	-	-	<i>mefpa.</i>
Teeth	-	-	-	<i>aour.</i>
Seal	-	-	-	<i>opopabos.</i>
No	-	-	-	<i>maal.</i>
Yes	-	-	-	<i>ike.</i>
Father	-	-	-	<i>aoi.</i>
Mother	-	-	-	<i>atzia.</i>
Star	-	-	-	<i>aimoulas.</i>
Night	-	-	-	<i>toumanes.</i>

CHAPTER XIII.

Departure from Monterey—Plan of the Course intended to be followed in crossing the Pacific Ocean to China—Vain Search after the Island of Nostra Señora de la Gorta—Discovery of Necker Island—Meet during the Night with a sunken Rock, upon which we were in Danger of being lost—Description of this Rock—Determination of it's Latitude and Longitude—Unsuccessful Search after the Islands of la Mira and the Gardens—We make the Island of Assumption, one of the Ladrones—Description and true Position of this Island in Latitude and Longitude—Error of the former Charts of the Ladrone Islands—Determine the Longitude and Latitude of the Bashee Islands—Anchor in Macao Road.

1786. THE part of the great ocean which we had to traverse, in order to
 September. arrive at Macao, is almost an unknown sea, in which we might hope to find some new islands. The Spaniards, who alone frequent it, have long lost that ardour for discovery, which the thirst of gold perhaps first excited, and which caused them to brave every danger. To the ancient enthusiasm, the cool calculation of security has now succeeded. Their course from Acapulco to Manilla is included in a space of twenty leagues, between the latitudes of 13° and 14° , and in their return they run nearly in the parallel of 40° , by the assistance of the westerly winds, which are very frequent in those regions. Sure, from long experience, of meeting neither with sunken rocks nor shoals, they sail in the night with as little precaution as in the European seas. Their voyages being more direct are shorter, and the interest of their employers is less exposed to be injured by shipwrecks.

Our expedition having for it's object new discoveries, and the progress of navigation in seas little known, we avoided the frequented routes with as much care as the galleons employ to keep, as it were, in the wake of

the preceding ones. We were obliged, however, to sail in the zone of 1786.
the trade winds, since, without their assistance, we could not flatter our- September.
selves with the expectation of arriving at China in six months, and of
accomplishing the ulterior objects of our voyage.

On our departure from Monterey, I formed the project of directing my course to the south-west, as far as latitude 28° , the parallel in which some geographers have placed the island of Nostra Señora de la Gorta. All my endeavours to find out the navigator who formerly made this discovery were fruitless. In vain I consulted my notes, and all the printed voyages which were on board the frigates: neither the history nor the romance of this island was any where to be met with; and I believe it is merely from the chart found by admiral Anson in the Manilla galleon, that geographers have continued to give it a place in the great ocean*.

I had procured at Monterey a Spanish manuscript chart of this ocean, which differs very little from that which was engraved for Anson's Voyage, and we may affirm, that since the capture of the Manilla galleon by that admiral, and even for two centuries back, no progress has been made in the knowledge of this sea, till the fortunate discovery of the Sandwich Islands; the Resolution and the Discovery, with la Boussole and l'Astrolabe, being the only vessels which, for two hundred years, have sailed out of the ordinary course of the galleons†.

Contrary winds and calms detained us two days in sight of Monterey; but they soon fixed at north-west, and permitted me to reach the parallel of 28° , in which I proposed to run five hundred leagues, as far as the longitude assigned to the island of Nostra Señora de la Gorta. It was less with the hope of finding it, than of effacing it from the charts; because it is desirable, for the interest of navigation, that islands ill deter-

* See the note, page 336-7.

† Admiral Anson, and the different buccaneers, having no other object than to take prizes, always followed the ordinary course.

1786. mined in latitude and longitude should remain in oblivion, and be totally
 September. unknown, till the moment when accurate observations, in latitude at least, should mark their true parallel, though observations of longitude might be wanting to ascertain the precise point they occupy upon the globe. It was my intention afterwards to direct my course towards the south-west, and to cross the track of captain Clerke, in the latitude of 20° , and 179° of longitude east of Paris, which is near the point where that navigator was obliged to abandon his route, to direct his course for Kamtschatka*.

October. My run at first was extremely fortunate. The north-east winds suc-
 18. ceeded those from the north-west, and I had no doubt but we should shortly arrive at the region of the trade-winds; but on the 18th of October they changed to the west, and were as steady as in the higher latitudes, varying only from north-west to south-west. I struggled for eight or ten days against these obstacles, taking the advantages of the different changes to proceed to the westward, and at length to gain the longitude which I purposed to reach.

We had heavy rain and storms almost continually; and the humidity was so extreme between decks, that all the clothes of the seamen were wetted, and I was greatly apprehensive that scurvy would be the consequence. We had, however, only a few degrees to run before our arrival
 27. at the wished-for meridian, which happened on the 27th of October. We had no sign of land, but two species of turnstones† (*coulon chauds*), which were caught on board the Astrolabe; but they were so lean, that it appeared probable they had for some time lost themselves on the sea, and had come from the Sandwich islands, from which we were only a hundred and seventy leagues distant. The island of Nostra Señora de la Gorta being

* Captain Clerke, on quitting the Sandwich islands, was desirous of following the parallel of 20° , as far as the meridian of Kamtschatka, because this course being new, he hoped it would be productive of discovery. He did not change his course till the 30th of March, 1779, and was then $180^{\circ} 40'$ east, or $179^{\circ} 20'$ west of Greenwich, which gives $178^{\circ} 20'$ east longitude from Paris. (French Editor.)

† More commonly known by the name of *alpettes de mer* (sand-pipers).

placed on my Spanish chart 45' more to the southward, and 4° more to the westward, than on the chart of admiral Anson, I shaped my course with the design of passing over this second point, but was not more successful. The westerly winds still prevailing in these regions, I endeavoured to approach the tropic, to find the general trade-winds which should carry us to Asia, and of which the temperature appeared to me to be better calculated to maintain the health of our people. We had yet not a man sick in either ship; but our voyage, though already very long, when compared with the immense space which remained, might be considered as little more than commenced. If the vast plan of our expedition daunted no one, our sails and rigging advertised us every day, that we had constantly kept the sea for sixteen months. Our running rigging gave way every instant, and our sailmakers were unable any longer to repair the sails, which were almost entirely worn out. It is true we had other stores on board; but the intended length of our course required the most rigid economy. Nearly the half of our cordage was already unserviceable, and we were very far from being at the extent of half our voyage.

1786.

October.

On the 3d of November, in 24° 4' north latitude, and 165° west longitude, we were surrounded with boobies, man of war birds, and tern, which generally keep near the land. We accordingly stood on with more caution, shortening sail during the night; and on the 4th, in the evening, we came in sight of an island, at the distance of four or five leagues to the westward. It appeared of no considerable magnitude, but we flattered ourselves that it might not be single.

November.

3.

4.

I made signal to haul the wind, and stand off and on all night, waiting the dawn of day with the utmost impatience, to complete our discovery. At five in the morning of the 5th we were only three leagues from the coast, and I stood before the wind to reconnoitre it. I hailed the Astrolabe to make sail a-head, and prepare to anchor, if the coast should afford an anchorage, or a creek in which it might be possible to land.

5.

This very small island is little more than a rock of about five hundred

1786. toises in length, and sixty in elevation at the most. It does not exhibit a
November. single tree, but there is a great deal of grass near the summit. The naked rock is covered with the dung of birds, and it's white appearance affords a contrast to various red spots, upon which the grass has not sprung up. I approached within the distance of a third of a league. The banks were perpendicular, like a wall, and the sea broke so violently against them, that it was impossible to land. As we sailed almost entirely round it, the plan of this island, as well as the different views, are perfectly accurate. It's latitude and longitude, as determined by Mr Dagelet, are $23^{\circ} 34'$ north, and $166^{\circ} 52'$ west of Paris. I called it *Isle Necker*. Though it's sterility may render it of little value, it's precise position must be an object of considerable importance to navigators, to whom it might otherwise be fatal. (*Charts and Plates, No. 39.*) I had passed very near the southern part of the island without sounding, as I was unwilling to stop the ship's way. Breakers appeared on every part of the coast, except at the south-east point, where there was a small ledge of rocks, extending about two cables length towards the sea. I was desirous, before I continued my course, to ascertain whether ground was to be had. I accordingly sounded, as did also the Astrolabe, which was nearly a league to leeward, and we both found only twenty-five fathoms, with a bottom of broken shells, a depth much more shallow than we had expected. It appeared evident to me, that Necker island is nearly the summit, or in some respect the nucleus of a much more considerable island, which the sea has undermined by degrees, probably from it's being composed of a tender or soluble substance; the rock, however, which is at present visible, is extremely hard, and will for many ages resist the action of time, and the efforts of the sea. As it was of much importance to ascertain the extent of this bank, we continued to sound on board the two frigates, directing our course to the west. The depth gradually increased with our distance from the shore; and at about ten miles in the offing we had no ground with a line of a hundred and fifty fathoms. Through the whole space of these ten miles the bottom consisted of coral and broken shells.

During the whole of this day we had men continually on the watch

from the mast-head. The weather was squally, with rain ; but it cleared up occasionally for short intervals, and we could then see the horizon for ten or twelve leagues round. At sun-set, in particular, the weather was beautifully fine, and the sea clear in every direction ; but we saw nothing but birds, whose number did not diminish, and which were in flights of several hundreds, moving in cross directions, which rendered it impracticable to draw any satisfactory conclusions relative to the point of the horizon, to which they might be directing their course. 1786. November.

The sky was so clear at the close of day, and the moon, which was near the full, so brilliant, that I thought we might venture to continue our voyage. I had, in fact, perceived by it's light in the evening Necker island, at four or five leagues distance. Nevertheless I had ordered all the studding sails to be taken in, and the rate of the two frigates to be reduced to three or four knots an hour. The wind was from the east, and our course to the west. Since our departure from Monterey we had never experienced a finer night, or a more pleasant sea ; but this tranquillity of the water was among the circumstances which had nearly proved fatal to us. Towards half past one in the morning we saw breakers at the distance of two cables length a-head of my ship. From the smoothness of the sea they made scarcely any noise, and some foam only, at distant intervals, was perceptible. The *Astrolabe* was a little farther off, but she saw them at the same instant with myself. Both vessels immediately hauled on the larboard, and stood with their head south-south-east ; and as they made way during the manœuvre, our nearest distance from the breakers could not, I conceive, be more than a cable's length. I sounded, and we had nine fathoms, rocky bottom ; soon afterwards ten and twelve fathoms, and in a quarter of an hour no ground, with sixty fathoms. We had thus escaped the most imminent danger to which navigators could be exposed ; and it is but justice to my people to observe, that there never appeared less disorder and confusion in such circumstances. The least negligence in the execution of the requisite manœuvres to carry us from the breakers would infallibly have produced our destruction. For nearly an hour we perceived the continuation of the

1786. breakers; but they trended to the westward, and in three hours we had lost
November. sight of them. I continued, however, standing to the south-south-east till day-break. The weather was still fine and clear, and no breaker was visible, though we had made only five leagues from the time of changing our course. I am persuaded, if we had not afterwards examined this sunken rock with particular attention, considerable doubts would have remained respecting its existence. But it was not sufficient to possess certainty upon the subject, and to have escaped from danger ourselves; I was also desirous that future navigators should not be exposed to it; and accordingly, at day-break, I gave orders to put about ship, and stand back again. At eight in the morning it was again in sight, bearing north-north-west. I made sail to come up with it, and we soon perceived a small island, or cleft rock, fifty toises at most in diameter, and about twenty or five and twenty in height. It was situate on the north-west extremity of this reef, of which the south-east point, where we had so nearly been lost, extended in that point of the compass for more than four leagues. Between the island and the breakers to the south-east, we saw three sand-banks, rising not more than four feet above the sea. They were separated from each other by a greenish water, which did not appear to be a fathom in depth. Some rocks at the surface, upon which the sea broke with violence, surrounded this shoal, as a circle of diamonds surrounds a medalion, and defended it from the fury of the sea. We sailed along the east, the south, and the western parts of it, at less than a league distance. No uncertainty remained but with regard to the northern part, of which we could only obtain a bird's eye view from the mast-head. It is possible, therefore, that it may be much more extensive than we have supposed: but its length from south-east to north-west, or from the extremity of the breakers, near which we were in such imminent danger, to the islet, is four leagues. The geographical position of this islet, estimated from the only visible part, was fixed by M^r Dagelet in $23^{\circ} 45'$ of north latitude, and $168^{\circ} 10'$ of west longitude, and is distant twenty-three leagues west north-west from Necker island. It must not be forgotten, that the eastern point is four leagues nearer. I named it *Basse des Frégates Françaises*.

shoal of the French Frigates, because it had nearly proved the final termination of our voyage. 1786.
November.

Having determined the geographical position of this shoal with all the accuracy in our power, I directed my course west-south-west. I had remarked, that all the clouds appeared to collect themselves in this direction, and I flattered myself, that I was on the point of making at last some land of greater importance. A heavy swell, which came from the west-north-west, led me to presume that there was no island to the northward, and I had some difficulty in persuading myself, that Necker island and the shoal of the French frigates did not precede an archipelago, perhaps inhabited, or at least habitable; but my conjectures were not realised; the birds soon disappeared, and we lost every hope of any immediate discovery.

I made no change in my plan of crossing the track of captain Clerke, at 179° of east longitude, and, on the 16th of November, I arrived at this point. But, though we were more than two degrees to the south of the tropic, we did not find those trade winds, which, in the Atlantic ocean in the same latitude, are subject to only slight and momentary variations; and in a space of more than eight hundred leagues, as far as to the vicinity of the Ladrões, we had followed the parallel of twenty degrees, with winds almost as variable as those which prevail in the months of June and July on the coasts of France. The north-west winds, which occasioned a high sea, veered first to the north, and then to the north-east, when the weather became clear and fine; presently they shifted to the east and south-east, with a whitish dull sky, and considerable rain: and a few hours afterwards, when they had successively passed to the south-west, the west, and lastly to the north-west, the horizon again became clear. This revolution lasted for three or four days, and it did not once happen that the south-east winds returned to the east and north-east. 16.

I have entered the more fully into this regularly variable transition of the winds, in this season and latitude, because it appears to me to contradict the opinion of those, who explain their regularity and steadiness be-

1786. November. tween the tropics from the rotatory motion of the earth. It is extraordinary enough, that, on the most extensive sea of the globe, and upon a space where the re-action of the land can have no influence, we should have experienced variable winds for nearly two months, and that they should not once fix to the eastward till we came into the vicinity of the Lardones *. It is true we traced only a single course on this ocean, but the fact notwithstanding is not entirely solitary, because of the period which our run lasted. I agree, however, that we ought not hence to conclude, that the zone comprised between the northern tropic and the 19th degree, is not in the line of the trade winds in the months of November and December: for certainly a single voyage is not sufficient to authorise so great a change in the received opinions; but we may affirm, that the laws on which they are founded are not so general but that they admit of many exceptions, and do not consequently agree with the explanations of those, who imagine they have discovered all the secrets of nature.

* If the cause of the trade winds be uncertain, the knowledge of their existence and of the time of their prevalence is nevertheless of infinite utility to navigators. It will be impossible to establish any infallible rule till the South-sea shall have been repeatedly traversed in all seasons. Nevertheless, the voyages hitherto known prove, that easterly winds prevail in the sea here spoken of by la Pérouse. A slight examination of the table of courses in Cook's third Voyage will sufficiently shew their constancy during the months of March, April, and May. If Clerke changed his course sooner than he intended, it was not from contrary winds; for as soon as they blew from the south he took the advantage to stand to the northward. Captain King speaks thus of the steadiness of the winds. "During the continuance of the light winds, which prevailed almost constantly ever since our departure from the Sandwich Islands." Cook's third Voyage, Vol. iii. p. 174. And in the next page, "On the 6th of April, at noon, we lost the trade wind."

On comparing the journal of Dixon with his table of courses, we shall see, that he left Attoui on the 18th of September, and arrived at Macao the 8th of November. During the fifty-two days of navigation between the equator and the 13th degree of north latitude, he ran through eighty degrés of longitude, and had but a single day with the wind to the southward. All the rest of the time easterly winds prevailed.

"Our captain judged it most prudent to steer to the southward, till we were in about 13° 30' north latitude, and then bear away to the westward; as that track was the most likely for a true trade, and it had been found in captain Cook's last voyage, that in the latitude 20° and 21° to leeward of these islands, the winds are at best but light, and often variable." Dixon's Voyage, page 281.

"From this day (22d of October) to the 31st, we had little variety. A constant easterly trade caused a heavy swell to set in from east-north-east." *Ibid.* p. 285. Here, then, is a fresh proof, that these winds prevail during the months of September, October, and November. (French Editor.)

The system of Halley, as to the variations of the magnetic needle, would have lost all confidence, even in the eyes of it's author, if this astronomer, celebrated on so many other accounts, had left Monterey in 124° of west longitude, and had crossed the great ocean as far as 160° of east longitude: for he would have found, that in a space of seventy-six degrees, or more than fifteen hundred leagues, the declination varies only 5° , and consequently the navigator can draw no conclusion to determine or rectify his longitude. The method of lunar distances, especially when joined to that of the time-keepers, leaves so little to be desired in this respect, that we made the island of Assumption, one of the Ladrone, with the greatest precision, upon the supposition that the island of Tinian, of which captain Wallis has given the position from his observations, lies nearly south from Assumption, a direction which all the geographers and navigators are agreed to give to the Ladrone Islands. We saw these islands on the 14th of December at two in the afternoon. I directed my course with the intention of passing between Mira Island and the Desert and Garden Islands, but their idle names occupy places on the charts where there was never any appearance of land, and thus deceive navigators, who perhaps may hereafter find them several degrees to the north or the south *. The island of Assumption itself, which makes part of a cluster of islands, so well known that we have their history in several volumes, is placed on the chart of the Jesuits, copied by all the geographers, $30'$ too far to the northward. It's true position is $19^{\circ} 45'$ north latitude, and $143^{\circ} 15'$ east longitude.

1786.
November.

December.
14.

As we had set the Mangs from our anchoring-place, bearing 28° west, distant about five leagues, we observed, that the three rocks of this name are likewise placed $30'$ too far to the northward; and it is almost certain that the same error exists as to the Uracas, the last of the Ladrone, the

* I have already observed in the notes, pages 279, 285, and 289, that it is not to be justified, and that it would even be dangerous, to efface from geographical charts the ancient discoveries for which modern navigators may have searched in vain; and the following is a new proof of my assertion.

Captain Marshall, returning, in 1788, from Botany Bay to Macao, fell in with the Garden Islands in $21\frac{3}{4}^{\circ}$ north latitude, and $148\frac{1}{2}^{\circ}$ west longitude from the meridian of Paris. (French Editor.)

1786. archipelago of which only extends to $20^{\circ} 20'$ north latitude. The Jesuits
December. have estimated the relative distances of the Ladrone Islands from each other with tolerable accuracy, but their astronomical observations respecting them are very indifferent. They have not judged with more felicity concerning the size of Assumption, for it is probable they had no other means of ascertaining it than those of estimation. They pretend that it is six leagues in circumference; but the angles we took reduce it to half this size, and the most elevated point is about two hundred toises above the level of the sea. The most lively imagination could not easily depict a more dreadful spot. The most ordinary view, after so long a passage, would have appeared enchanting to us; but a perfect cone, of which the surface, as far as forty toises above the level of the sea, was as black as charcoal, could not but mortify us, by destroying our hopes: for we had feasted our imaginations, for several weeks, with the turtle and cocoa-nuts we expected to find upon some of these islands.

We perceived indeed a few cocoa-nut trees, which occupied scarcely a fifteenth part of the circumference of the island, in a hollow of about forty toises, where they were in some measure sheltered from the east winds. This is the only place where it is possible for vessels to anchor, in thirty fathoms, upon a bottom of black sand, which extends about a quarter of a league. The Astrolabe had already gained this anchoring-place, and I had myself let go my anchor at the distance of a pistol-shot from that frigate; but having dragged it half a cable's length, we lost all bottom, and were obliged to weigh with a hundred fathoms of cable out, and to make two tacks in order to approach the land. This slight misfortune gave me no concern, because I saw that the island did not deserve a long stay. My boat went on shore, under the command of lieutenant Boutin, as did also that of the Astrolabe, in which M^r de Langle himself embarked with M^{essrs} de la Martinière, Vaujuas, Prevost, and father Receveur. I had observed with my perspective-glass that they found great difficulty in landing. The sea broke every where, but they at last profited by an interval of calmness, and got on shore, after having first plunged up to their necks in water. I was apprehensive, that their getting on board might prove still

more difficult, as the surf might increase every moment. This was the only event which could induce me to anchor, for we were all as urgent to depart as we had before been desirous of reaching this spot. Fortunately, at two in the evening, I saw our boats return, and the *Astrolabe* set sail. M^r Boutin reported, that the island was a thousand times more horrible than it appeared at the distance of a quarter of a league. The lava from the volcano has formed in it's course ravines and precipices, bordered with a few stunted cocoa-trees remote from each other, intermixed with creeping underwood, and a small number of plants, among which it is almost impossible to advance a hundred toises in an hour. Fifteen or sixteen persons were employed from nine in the morning till noon, to carry to the two boats about a hundred cocoa-nuts, which they had only the trouble to collect under the trees; but the difficulty consisted in conveying them to the shore, though the distance was very short. The lava has covered the whole surface of the cone, except a narrow portion of about forty toises towards the sea. The summit appears in a certain degree vitrified, but the glass is black and of the colour of soot. We did not perceive the top of the cone, as it was constantly enveloped in a cloud; but though we did not see it smoke, the odour of sulphur, which it spread to the distance of half a league at sea, led me to suspect, that it was not entirely extinguished, and that it's last eruption was probably not very ancient; and there is beside no appearance of decomposition in the lava on the middle of the mountain.

1786.
December.

Every circumstance announced, that no human creature nor quadruped had ever been so unfortunate as to have selected this island for an asylum, upon which we saw no other animal than crabs of the largest species, which would be very dangerous in the night to any one who might resign himself to sleep. They brought one of them on board. It is probable that this crustaceous animal has driven from the island those sea-birds, which always lay their eggs on shore; but which, in this place, could only deposit them to be devoured. We saw only three or four boobies at the anchoring-place; but when we approached the Mangs our ships were surrounded with a numberless flock of birds. M^r de Langle killed on the island of Assump-

1786. tion a bird resembling a black-bird, but which did not augment our col-
December. lection, as it fell over a precipice. Our naturalists found some very beautiful shells in the hollows of the rocks. M^r de la Martinière also made an ample harvest of plants, and brought on board three or four species of the banana, which I had never seen elsewhere. We observed no other fishes than a red ray, some small sharks, and a sea serpent, which might be about three feet in length and three inches in diameter. The hundred cocoa-nuts, and the few objects of natural history, which we had so rapidly snatched from this volcano, for such it truly is, had exposed our boats to the greatest danger. M^r Boutin, who was obliged to throw himself into the sea, both in getting on shore and in recovering the boat, had his hands cut in several places, from being obliged to rest them on the sharp rocks that surround this island. M^r de Langle had also encountered some dangers; but they are inseparable from the landing on all such small islands, and particularly of so round a figure. The sea, which comes from the windward, glides along the coast, and forms a surf upon all the points, which renders the landing extremely dangerous.

Happily for us we had sufficient water to serve us to China; for it would have been difficult to have taken in any at Assumption, if, indeed, there be any on the island. Our detachment saw none, except in the cavities of some of the rocks, where it remained as in a vessel, in no case exceeding the quantity of six bottles.

At three in the evening, the Astrolabe having made sail, we continued our course west-north-west, passing the Mangs at the distance of three or four leagues, bearing north-west by north. I could have wished to have determined the position of the Uracas, the most northerly of the Ladrones; but this would have consumed a night, and I was in haste to reach China, lest the European vessels should have departed before our arrival, and I should lose the opportunity of sending to France the products of our researches on the coast of America, as well as the relation of our voyage as far as Macao: and accordingly, that I might not lose a moment, I stood on with every sail.

During the night the two frigates were surrounded with an innumerable flock of birds, which I supposed to be inhabitants of the Mangs and Uracas, which are merely rocks. It is evident, that these birds fly only to the leeward; for we had seen scarcely any to the eastward of the Ladrones, while they attended us forty leagues to the westward. Most of them were man of war birds, and boobies, with some gulls, terns, and tropic birds. The wind was very strong in the channel which separates the Ladrones from the Philippines, with a heavy swell, and the currents constantly drifted us to the south at the rate of about half a knot an hour. Our vessel made a small quantity of water for the first time since our departure from France; which I attributed to the decay of the oakum in some seams near the water line. Our caulkers, who had examined the upper part of the ship, during the passage, had found several almost entirely open, and they suspected those near the water to be in the same state. It was not possible to repair them at sea; but on our arrival in Macao roads it was their first employment.

1786.
December.

On the 28th we saw the Bashee* Islands, of which admiral Anson has given a determination as to longitude which is not exact: that of captain Wallis approaches nearer the truth. We passed within a league of the two rocks which lie farthest to the north. They ought rather to be called *islets*, notwithstanding the authority of Dampier; for the smallest is half a league in circumference; and though it is not wooded, it is covered on the eastern side with grass. The longitude of this islet, determined, while it bore south, at the distance of a league, was fixed by the mean of more than sixty lunar observations, taken in the most favourable circumstances †, at $119^{\circ} 41' 49''$ longitude east, and its latitude at $21^{\circ} 9' 13''$ north. Mr Bernizet has also laid down the position of all these islands with respect to each other, and drawn a plan which is the result of more

28.

* The Bashee, or Bachi Islands, were so called by Dampier from the name of an intoxicating liquor which is very much drank there. (French Editor.)

† I have thought it necessary to apprise navigators, that these pretended rocks are small islands; for I was myself misled for several hours by their bearing in charts this denomination.

1786. than two hundred bearings. As the Bashees have been several times vi-
December. sited, and afford no object which could interest us, I did not purpose to anchor here; and accordingly, having determined their position, I continued

1787. my course towards China, and on the 1st of January, 1787, I found bot-
January. tom in sixty fathoms. The next day we were surrounded by a great

1. number of fishing-boats, which kept the sea in very foul weather; but they could not pay any attention to us, the nature of their occupation not permitting them to turn aside to accost vessels, while dragging with nets of extreme length, which cannot be raised in less than two hours.

2. On the 2d of January we made the White Rock, and anchored in the evening to the north of Lin-ting Island, and the following day in Macao road, after having passed through a channel which I conceive to be little frequented, though very beautiful*. We had taken on board Chinese pilots from Lamma Island.

* Navigators who wish for a knowledge of this channel should procure Dalrymple's chart. We left to the southward the great Lamma, the Lin-ting Islands, Chichow, Laf-sam-mee, Long-shitow and Chang-chow, and to the north only the island of Sockochow and the great Lantao.

CHAPTER XIV.

Arrival at Macao—Stay in the Road of Typa—Obliging Reception on the part of the Governor—Description of Macao—It's Government—It's Population—It's Relation with the Chinese—Departure from Macao—Anchor at the Island of Luconia—Uncertainty of the Position of the Shoals of Bulinao, Mansilog, and Marivelle—Description of the Village of Marivelle, or Mirabella—Enter Manilla Bay by the southern Passage, after having attempted in vain the northern.—Marks for working into the Bay of Manilla without Danger—Anchorage at Cavite.

THE Chinese, who had piloted us into Macao, refused to conduct us to the anchorage of Typa. They showed the greatest earnestness to depart with their boats; and we afterwards learned, that if they had been caught, the mandarin of Macao would have demanded of each half the sum he had received. This kind of contribution is commonly preceded by a number of blows with a cane. These people, whose laws are so much vaunted in Europe, are perhaps the most unhappy, the most oppressed, and the most arbitrarily governed, of any nation on the earth, if a judgment may be formed of the Chinese government in general from the despotism of the mandarin of Macao.

1787.
January.

The weather, which was very cloudy, had prevented us from distinguishing the town; but it cleared up about noon, when it bore west 1° south, distant about three leagues. I sent a boat on shore under the command of M^r Boutin, to apprise the governor of our arrival, and acquaint him, that we purposed to make some stay in the road, for the refreshment and repose of our people. M^r Bernardo Alexis de Lemos, governor of Macao, received this officer in the most obliging manner, and offered us

1787. every assistance in his power, sending immediately a Malay pilot to conduct us to the anchorage of Typa. At day-break the next day we got under way, and anchored at eight in the morning in three fathoms and a half, muddy bottom, the town of Macao bearing north-west, distant five miles.

We came to anchor alongside a French flute, commanded by M^r de Richery, ensign of a man of war, which came from Manilla, and was ordered by M^{esses} d'Entrecasteaux and Cossigny to cruize off the eastern coasts to protect our trade. We had, accordingly, after an interval of eighteen months, the pleasure of meeting not only with our countrymen, but even with our friends and acquaintance. M^r de Richery had accompanied the Malay pilot the evening before, and had brought us a very considerable quantity of fruits, garden-stuff, fresh meat, and generally every thing which he could suppose agreeable to navigators after a long voyage. Our appearance of good health surprised him. He informed us, that the political situation of Europe was precisely the same as at our departure from France; but all his inquiries at Macao, to discover if any one had been charged with dispatches for us, were in vain. It was more than probable that no letter addressed to us had arrived in China; and we had the mortification to think ourselves forgotten by our families and friends. Painful situations render men unjust: those letters which we so strongly regretted might possibly have been entrusted to the company's ship which had lost her passage. Her companion alone had arrived this year; and we learned from the captain, that the greatest part of the supplies, and all the letters, were on board the other vessel. We were perhaps more afflicted than the merchants at the misfortune which had prevented the arrival of this ship; and it was impossible for us to avoid remarking, that, out of twenty-nine English vessels, five Hollanders, two Danes, one Swede, two Americans, and two French, the only one which lost her passage was of our own nation. As the English do not entrust these ships but to the most experienced seamen, an event of this kind scarcely ever happens to them; and when they arrive too late in the Chinese seas, and find the north-east monsoon set in, they struggle against it with obstinacy,

often penetrate to the eastward of the Philippines, and standing to the northward in this sea, which is much more open, and less exposed to currents, return to the south of the Bashee Islands, make the land of Piedra Blanca, and pass like us to the north of the great Lamma. We were witness of the arrival of an English vessel, which, after having made this course, anchored in Macao road ten days after us, and immediately proceeded for Canton *. 1787. January.

My first care, after having moored the vessel, was to repair with M^r de Langle to thank the governor for his obliging reception of M^r Boutin, and to ask permission to have an establishment on shore, in order to fit up an observatory, and restore the health of M^r Dagelet, which was much impaired by the fatigues of our passage, as well as of M^r Rollin, our surgeon, who, after having defended us from the scurvy and every other disorder by his advice and care, must himself have sunk under the fatigues of our long voyage, had our arrival been retarded a week longer.

M^r de Lemos received us as if we were his own countrymen. Every thing we had asked was granted with a politeness which cannot be expressed. He offered us his house; and as he did not speak French, his lady, a young Portuguese from Lisbon, officiated as interpreter. She added to the replies of her husband her own graceful and amiable manner, which was superior to what might be expected even in the principal towns of Europe.

Donna Maria de Saldagna had been married to M^r Lemos, at Goa, twelve years before, and I had happened to arrive at that city, as commander of the flute La Seine, shortly after the nuptials. She was so kind as to mention this circumstance, which was present in my memory, and obligingly added, that I was an old acquaintance: then calling her children, she told me, that it was thus she always presented herself to her

* D'Entrecasteaux, in 1787, made a voyage from the Isle of France to China, against the monsoon. He passed through seas almost unknown, and discovered several rocks and shoals which are not mentioned in any chart. (French Editor.)

1787. friends; that their education was the object of all her care; that it was
January. her pride to be their mother; a pride which she hoped we would pardon,
as she wished to conceal from us none of her faults.

A more charming picture could not have been exhibited in any part of the world. The most beautiful children surrounded and embraced this affectionate mother, her kind and benevolent disposition communicated itself to all around her.

We were soon informed, that to her private virtues and accomplishments were added a firmness of character and an elevated mind; that in several delicate situations in which M^r de Lemos had been placed with regard to the Chinese, he had been confirmed in his generous resolutions by her prudent counsels, and that they had both determined, that they ought not, like their predecessors, to sacrifice the honour of their nation to any interest whatever. The administration of M^r de Lemos would have formed a striking epocha in the history of the colony, if the superiors at Goa had been sufficiently enlightened to have continued him longer in his place than three years, and had left him time to accustom the Chinese to a resistance, of which, for more than a century, they had lost the remembrance.

As the inhabitants of Macao are as remote from China as if they resided in Europe, from the extreme difficulty of penetrating into that empire, I shall not imitate those travellers, who have spoken of it without having had the smallest opportunity of knowing it, but shall confine myself to a description of the relation existing between the Europeans and the Chinese; the extreme humiliation of the former; the feeble protection they can derive from the Portuguese establishment on the coast of China; and, lastly, the importance which the town of Macao might possess in the hands of a nation that should conduct itself with justice, and at the same time with firmness and dignity, towards a government, which is probably the most unjust, the most oppressive, and the most cowardly in the world.

The Chinese carry on a trade with the Europeans to the amount of 1787. fifty millions of livres *, of which two fifths are paid in English cloths, January. in Batavia or Malacca tin, in cotton from Surat and Bengal, in opium from Patna, and in sandal wood and pepper from the coast of Malabar. A few objects of luxury are likewise brought from Europe, such as looking glasses of the largest dimensions, Geneva watches, coral and fine pearls; but these last scarcely need be reckoned, and cannot be sold to any advantage but in very small quantities. In exchange for all these valuable commodities, no other return is made but green or black tea, with some bales of raw silk, for the European manufactures; for I make no account of the porcelain, which is taken for the mere convenience of ballast; or of the silks, which afford scarcely any profit. No nation, certainly, carries on so advantageous a trade with foreigners, and yet there is no nation which imposes conditions so harsh, or multiplies vexations and every species of inconvenience with more audacity. There is not a cup of tea drank in Europe which has not been productive of humiliation to those who purchased it at Canton, and who have embarked and sailed over half the globe to bring this leaf to our markets.

It is impossible to avoid relating in this place the story of an English gunner, who, two years ago, in firing a salute by order of his captain, killed a Chinese fisherman, who imprudently placed himself in the range of his cannon, and whom he could not have seen. The santock, or governor of Canton, demanded the gunner, and at length obtained his request, by promising that no harm should befall him, adding, at the same time, that he was not so unjust as to punish an involuntary homicide. On this assurance the unhappy man was delivered up, and two hours afterwards was hanged. The national honour demanded a speedy and notorious vengeance: but merchant-ships did not possess the means; and the captains of these ships, accustomed to punctuality, honesty, and that moderation which does not endanger the property of their employers, could not undertake a spirited resistance, which would have occasioned a loss of forty millions † to the company, whose vessels would have returned

* £. 2,083,333 6s. 8d.

† £. 1,666,666 13s. 4d.

1787. empty. But they no doubt denounced this injury, and flattered them-
January. selves that they should obtain satisfaction. I will venture to affirm, that all the agents of the different European companies would give with pleasure a considerable part of their fortune, to teach these dastardly mandarins, that every injustice has its limit, and that conduct like theirs exceed all the bounds of inhumanity.

The Portuguese have still more reason to complain of the Chinese than any other nation. The respectable title by which they possess Macao is well known, and is a monument of the gratitude of the emperor Camhy. The ground on which it is built was given to the Portuguese for having destroyed, in the islands in the neighbourhood of Canton, the pirates, who infested the seas and ravaged all the coasts of China. It is an idle declamation to attribute the loss of their privileges to the abuse they have made of them: their crimes consist solely in the weakness of their government. The Chinese have committed every day new injuries, and advanced new pretensions. The Portuguese government has never opposed the least resistance; and this place, from which a European nation, possessing but a slight degree of energy, might have overawed even the emperor himself, is little more than a Chinese town, in which the Portuguese are tolerated, though they have the undoubted right to command, and the means to make themselves feared, if they would maintain merely a garrison of two thousand Europeans, with two frigates, a few corvettes, and a bomb vessel.

Macao, which is situate at the entrance of the Tigris, can receive vessels of sixty-four guns in its road, at the entrance of the Typa; and in its harbour, which is below the town, and communicates with the river to the eastward, vessels of seven or eight hundred tons, half laden. According to our observations, its latitude is $22^{\circ} 12' 40''$ north, and its longitude $111^{\circ} 19' 30''$ east from Paris.

The entrance of this harbour is defended by a fortress of two batteries, which must be passed within pistol-shot. Three small forts, two of

which are mounted with twelve guns, and the other with six, secure the southern part of the town from every enterprise on the part of the Chinese. These fortifications, which are in the worst state, would be of little avail against Europeans; but they can keep the whole maritime force of China at a distance. A mountain also commands the road, upon which a detachment might support a very long siege. The Portuguese of Macao, more religious than military, have built a church on the ruins of a fort, which crowned this mountain and formed an impregnable station.

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The land side is defended by two fortresses, of which one, mounted with forty guns, may contain a garrison of a thousand men. It has a cistern, two springs of clear water, and casemates for ammunition and provisions. The other, on which are thirty guns, is capable of containing only three hundred men; it has a spring, which is very abundant in it's water, and is never dry. These two citadels command the whole country. The Portuguese limits scarcely extend to the distance of a league from the city, and are bounded by a wall, which is guarded by a mandarin and a few soldiers. This mandarin is the true governor of Macao, and the Chinese obey his orders. He has no right to sleep within the limits; but he may visit the place in the day, and even the fortifications, inspect the custom-houses, &c.; and on these occasions the Portuguese are obliged to salute him with five guns. No European, however, is allowed to set his foot on the Chinese territory beyond the wall. An imprudence of this kind would subject him to the mercy of the Chinese, who might either detain him prisoner, or exact a large sum of money. Some officers of our frigates nevertheless exposed themselves to this danger; but no serious consequence resulted from this act of levity.

The whole population of Macao may be estimated at twenty thousand souls; of which a hundred may be Portuguese by birth, two thousand of mixed breed, or Indian Portuguese; as many Caffre slaves, who serve them as domestics; and the remainder Chinese, employed in commerce and different trades, which render the Portuguese tributary to their industry. These last, though almost all mulattoes, would think themselves disho-

1787. noured if they were to practise any mechanic arts, and by that means supported their families; but their pride is not in the smallest degree offended by their incessantly importuning the charity of passengers.
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The viceroy of Goa nominates to all the employments, civil and military, at Macao. The governor is of his choice, as well as the senators, who share with him the civil authority. He has fixed the garrison at a hundred and twenty four Indian seapoys, and a hundred and twenty soldiers. The service of this guard consists in patrolling the town and district in the night. The soldiers are armed with clubs, while the officer alone has the right of wearing a sword, but is in no case permitted to use it against a Chinese. Even if a thief of this nation should be surprised breaking a house open, or carrying off the goods, he must be apprehended with the greatest precaution; and if a soldier, in defending himself against the robber, have the misfortune to kill him, he is delivered to the Chinese governor, and hanged in the middle of the market-place, in presence of the same guard of which he formed a part, and of two Chinese mandarins, who, at their entrance into the town, as well as their departure after the execution, are saluted with cannon. But if, on the contrary, a Chinese kill a Portuguese, he is delivered into the hands of the judges of his nation, who, after first plundering him, make a pretence of performing the other formalities of justice, but suffer him to escape, and turn a deaf ear to the remonstrances which may be made by this injured people, which are never followed by any satisfaction.

The Portuguese, however, have lately made a vigorous effort, which ought to be engraved on brass in the annals of the senate. A seapoy having killed a Chinese, they caused him to be shot by their own people, in presence of the mandarins, and refused to submit this affair to the decision of the Chinese tribunal.

The senate of Macao is composed of the governor, who is president, and three *vercadores*, who are the auditors of the finances of the town, the revenues of which consist in duties imposed on merchandise, which enters

Macao in Portuguese vessels only. They are so blind to their own interest, that they will permit no other nation to land goods within their city, even on paying the established duties, as if they were afraid of augmenting the revenue of their own customs, and diminishing that of the Chinese at Canton.

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It is certain, that if the Port of Macao were to become free, and the town had a garrison capable of assuring the safety of the commercial property which might be deposited there, the revenues of the customs would be doubled, and would no doubt be equal to all the expences of government; but a paltry individual interest opposes this arrangement, which sound policy so clearly prescribes. The viceroy of Goa sells Portuguese commissions to the merchants of the different nations, who trade from port to port in India. The same adventurers make also certain presents to the senate of Macao, according to the importance of their expedition; and these mercantile bribes will perhaps be an invincible obstacle to the establishment of a free trade, which would render Macao one of the most flourishing towns in Asia, and a hundred times superior to Goa, which will never be of the least utility to the mother country.

Next to the *vercadores* of whom I have spoken, there are two judges of the rights of orphans, charged with the administration of the property of minors, the execution of testaments, the nomination of tutors and guardians, and generally of all disputes relative to successions. An appeal may be made to Goa against their decisions.

The other civil or criminal causes are also determined in the first instance by two senators, who have the title of judges. The product of the duties is received by a treasurer, who pays, pursuant to the orders of the senate, the salaries and different expences; which, however, if they exceed three thousand piastres, must have the sanction of the viceroy of Goa.

The most important magistracy is that of the procurator of the town,

1787. who is the intermediate agent between the two governments of Portugal
January. and China ; is answerable for all foreigners who winter at Macao, and receives and transmits to their respective governments the mutual complaints of the two nations, of which a secretary, who has no deliberative voice, keeps a register, as well as of all the deliberations of the council. He is the only officer whose employ is permanent. That of the governor lasts three years, and the other magistrates are changed annually. So frequent a renewal, which is inimical to every connected system, has not a little contributed to the annihilation of the ancient rights and privileges of the Portuguese, and which doubtless could not be continued, if the viceroy of Goa did not find his account in having a number of places to give away or to sell: a conjecture authorised by the general manners and customs of Asia.

All the decisions of the senate may be referred to Goa by appeal ; and the well known incapacity of it's members renders this law extremely necessary. These colleagues of the governor, who is himself a man of distinguished merit, are Portuguese of Macao, but extremely vain and proud, though more ignorant than our country school-masters.

The appearance of this town is lively and agreeable, (*Charts and Plates, N° 40*). There remain, as parts of it's ancient opulence, several good houses, which are let to the supercargoes of the different companies, who are obliged to pass the winter at Macao ; the Chinese compelling them to quit Canton when the last vessel of their nation has sailed, and not permitting them to return till the arrival of the ships from Europe in the following monsoon.

The residence at Macao during the winter is rendered, by these supercargoes, very agreeable, who are generally men of talents and information, and are in possession of a sufficient revenue to maintain an excellent establishment. The object of our mission procured us the most obliging reception on their part ; but without this recommendation, and if we had

had no other title than that of Frenchmen, we should nearly have been as orphans, our Company having as yet no representative at Macao. 1787.
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We owe a public testimony of gratitude to Mr Elstockenstrom, the principal agent of the Swedish Company, whose behaviour towards us was that of an old friend and fellow-countryman, zealous for the interest of our nation. He had the kindness to undertake the sale of our furs, on our departure, the produce of which was to be divided among our people, and he promised to remit the amount to the Isle of France.

The value of these furs was only a tenth part of what they bore when captains Gore and King arrived at Canton; because the English had this year made six expeditions to the north-west coast of America; two vessels, designed for this trade, having sailed from Bombay, two from Bengal, and two from Madras. The two last alone had returned, and with no great quantity of skins; but the report of this fleet had spread in China, and no more than twelve or fifteen dollars were now offered for a skin of the same quality, as, in 1780, would have produced more than an hundred. We had a thousand skins, which a Portuguese merchant had agreed to purchase for nine thousand five hundred piastres; but at the moment of our departure from Manilla, when the money was to be paid, he made a difficulty of receiving them, under frivolous pretences. As the supposed conclusion of our bargain had driven away all the other competitors, who had returned to Canton, he was in hopes, no doubt, that in our embarrassment we should abate of the price; and we have reason to suspect that he sent on board some Chinese merchants, who offered a much smaller sum. But, though we were little accustomed to these manœuvres, they were too glaring not to be detected, and we absolutely refused to sell them.

There was now no other difficulty with regard to our furs, than that of landing and depositing them at Macao. The senate, to which Mr Veillard, our consul, addressed himself, refused permission; but the governor, understanding they were the property of our seamen, employed in an

1787. expedition which might become useful to all the maritime nations of Europe, concluded, that he should accomplish the views of the Portuguese government in departing from the prescribed rules, and accordingly conducted himself on this, as on every other occasion, with his usual delicacy *.

It is unnecessary to remark, that the mandarin of Macao made no demand for our anchorage in the road of the Typa, which constitutes no part of the Portuguese possessions, any more than do the different islands. His claims, if he had made any, would have been rejected with contempt; but we were informed, that he had demanded a thousand dollars from the *comprador* who supplied us with provisions. This sum was not extravagant, considering the knavery of this *comprador* †, whose accounts for

* Having embraced every opportunity of acknowledging with impartiality the confidence to which Dixon is entitled, I have reason to think, that, in perusing the voyage of la Pérouse, he will feel a little regret for having accused our navigators of mercantile views and imposture; and justice calls upon me to repel this calumny of Dixon. The following is the passage to which I refer:

"The Astrolabe and Boussole, two French ships, commanded by M. Peyrouse and de Langle, sailed from France in 1785; they are said to have traced the north-west coast of America, from the Spanish settlement of Monterey to 60° north latitude; but this seems improbable; for though these vessels were professedly fitted out on discovery, yet the commanders did not forget that furs were a valuable article; and accordingly, whilst on the American coast, they procured about six hundred sea-otter skins, chiefly in pieces, of a very inferior quality, and evidently the same as those imported by the Spaniards; whereas, had these gentlemen been well in with the coast to the northward, they undoubtedly must have met with sea-otter skins of a quality far superior to what they procured."

Dixon's Voyage, page 320.

After having reminded the reader, that la Pérouse did not deal in sea-otter skins, except in compliance with the orders contained in the ninth article of the second part of his instructions, in order to have a leading datum, and be able to give an account of this branch of commerce, and that he traded merely for the benefit of his seamen, I must observe, in contradiction to the assertion of Dixon, that this commerce took place at Port des Français, in 58° 37' north latitude; and that therefore la Pérouse was right in affirming, that there could not be a greater difference than ten per cent. between the quality of the skins procured at Port des Français and those of Monterey. (French Editor.)

† "As it was captain Dixon's wish to procure fresh provision for the ship's company as soon as possible, no time was lost in making every necessary inquiry for that purpose; and we soon learnt, that in spite of our utmost care, it would be impossible to avoid a number of impositions: that every vessel was supplied with whatever provisions they wanted by an officer, called *comprador*, who always

the first five or six days only, amounted to upwards of three hundred piastres; but, convinced of his dishonesty, we dismissed him. The clerk of the commissary of the stores afterwards went daily to the market, as in our European towns, to purchase whatever was wanted; and the expence for a whole month was less than that of the first week. 1787. January.

It is probable, that our economy was displeasing to the mandarin; but this was a mere conjecture on our part, as we had no dealings whatever with him. The Chinese custom houses have no concern with Europeans, excepting for such articles of commerce as come from the interior of China, in boats of that country, or are embarked on board those boats at Macao, to be sold in the empire. What we bought in the town, to carry on board in our own boats, was subject to no examination.

The climate of the road of Typa is at this season very uncertain. The thermometer varied eight degrees from one day to the other. We were almost all afflicted with severe colds and fevers, which disappeared in the salubrious temperature of the Island of Luconia, which we made on the 15th of February. We left Macao on the 5th, at eight in the morning, February. with a north wind, which would have allowed us to pass between the islands, if we had had a pilot; but wishing to spare this expence, which is considerable, I followed the ordinary track, and passed to the south of the great Ladrone. We had engaged six Chinese sailors on board each frigate, to replace those we had lost when our boats were unhappily cast away.

demanded a *cumshau*, or gratuity of three hundred dollars, exclusive of the profit which accrues to him from serving us with provisions.

"A demand of this nature appeared so exorbitant, that we determined, if possible, to avoid it; and a captain Tasker from Bombay, whose vessel lay near ours, kindly offered to furnish us with beef for the present. This, however, could not be done without caution, for we had a *boppo*, or custom-house boat, on each side the vessel, with officers on board, who made it a point to prevent any beef coming on board, unless furnished by a comprador." Dixon's Voyage, page 292. (French Editor.)

1787. The situation of these people is so unfortunate, that, in spite of the laws
February. of the empire which forbid it's subjects to emigrate on pain of death, it would have been easy for us to have enlisted, if we had wanted them, two hundred men in a week.

Our observatory was fitted up at Macao in the convent of the Augustins, from which we fixed the longitude of this town at $111^{\circ} 19' 30''$ east by the mean of several sets of distances between the sun and moon. The rate of our timekeepers was likewise verified, and we found that the daily loss of N° 19 was $12' 36''$, a more considerable one than we had ever observed before this period. It must be remarked, however, that for twenty-four hours it was neglected to be wound up, and that the defect in the steadiness of it's rate might probably have arisen from this circumstance. But supposing, that, till our arrival at Macao, and before the negligence in question, the losing rate of N° 19 had been the same as we had determined it at Conception, it would have given for the longitude of Macao $113^{\circ} 33' 33''$, that is to say, $2^{\circ} 14' 3''$ more than it really proves from our lunar observations; and thus the error of this timepiece, after ten months' navigation, would have been only forty-five leagues.

The northerly winds allowed me to stand to the eastward, and I should have passed in sight of Piedra Blanca, if they had not come quickly round to the east-south-east. The information I had received at Macao, concerning the best course to be held to Manilla, did not say, whether I should pass in preference to the north or the south of the shoal de Pratas; and I therefore concluded, from the diversity of opinions, that it was a matter of indifference. The easterly winds, which blew with much violence, determined me to haul close on the starboard tack, and direct my course to leeward of this shoal, which, till captain Cook's third voyage, was erroneously placed on all the charts. Captain King, by determining it's latitude with precision, has rendered a signal service to navigators who run from Macao to Manilla, and who before followed with confidence the chart of Mr Dalrymple, which is copied by Mr Dapprès. These two authors, meritorious and exact as they are when they have constructed plans from their own la-

bours, have not always been able to procure perfect information; and the situation of the Pratas, and that of the western coast of Luconia, as well as of the bay of Manilla, are entitled to no confidence. As I was desirous of making the island of Luconia in latitude 17° , in order to pass to the north of the shoal of Bulinao, I stood as near that of Prata as possible. I even passed at midnight over the place it occupies on the chart of Mr Daprès, who has extended this danger twenty-five miles too far to the south. The position he has given to the shoals of Bulinao, Mansiloq, and Marivelle, is not more exact. The ancient course and practice have shown, that there was nothing to fear in making the land to the north of 17° ; and this has appeared sufficient to the different governors of Manilla, who, for two centuries, have not found a single moment's leisure to reconnoitre, with a few small vessels, these places of danger, and determine at least their latitude, with their distance from the island of Luconia, of which we came in sight on the 15th of February, in $18^{\circ} 14'$ north. We flattered ourselves, that nothing more remained, but to run down the coast with the north-easterly winds to the entrance of Manilla. But the monsoons do not prevail along the shore. The winds were variable from north-west to south-west for several days: the currents carried us to the north at the rate of a knot an hour; and till the 19th of February we did not advance so much as a league a day. At length, the north winds freshening, we sailed along the Illoco coast at the distance of two leagues, and saw in the Port of Santa Cruz a small two-masted vessel, which was probably taking in a cargo of rice for China. It was impossible to make any of our bearings agree with the chart of Mr Daprès; but our own observations permitted us to give the direction of this coast, which is very little known, though much frequented. On the 20th we doubled Cape Bulinao; and on the 21st Point Capones bore east precisely in the wind's eye. We made several tacks to approach it, and gained the anchorage, which does not extend above a league from the shore. We saw two Spanish vessels, which appeared unwilling to open the entrance of Manilla Bay, from which the easterly winds blew strongly, and chose rather to remain under the shelter of the land. We stood on to the south of Marivelle Island; and the winds in the afternoon having shifted to the east-south-east, we

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1787. directed our course between this island and that of La Monha, with the hopes
February. of entering by the northern passage ; but after having made several boards in this passage, which is not more than half a league in breadth, we perceived that the currents were so strong to the west as decidedly to frustrate our attempt. We therefore determined to put into the harbour of Marivelle, which was a league to leeward, and there to wait for better winds, or a more favourable current. We anchored in eighteen fathoms, muddy bottom ; the town bearing north-west by west, and the Hogs (*les porcs*) south by east 3° south. This harbour is open only to the south-west winds, and the ground is so good, that I think a vessel might remain here without any danger during the monsoon in which they prevail.

As we were in want of wood, which I knew was very dear at Manilla, I determined to remain twenty-four hours at Marivelle to take in some ; and the next morning, at day-break, we sent on shore all the carpenters of the two frigates with our long boats. At the same time I directed the jolly boats to sound the bay. The rest of the people, with the barge, were reserved for a fishing party in the cove near the village, which appeared sandy, and well adapted for hauling the seine: but this was a mistake ; for we found the bottom rocky, and so shallow, at two cables length from the shore, that it was impossible to fish. All the benefits we derived from our fatigues were a few thorny woodcocks, in pretty good preservation, which we added to our collection of shells. About noon I landed at the village, which consists of about forty houses, built of bamboo, covered with leaves, and raised about four feet from the ground. The floor of these houses is also made of small bamboos, which do not touch each other, and which give them the appearance of bird cages. The mode of ascending them is by a ladder ; and I do not believe that all the materials of such a house, roof and frame included, would weigh two hundred pounds.

In front of the principal street is a large edifice of hewn stone, but almost entirely in ruins. There are still seen, however, two brass guns at the windows, which serve as embrasures.

We were informed, that this edifice was at once the house of the curate, the church, and the fort ; but all these titles had been insufficient to awe the Moors of the southernmost Philippine Islands, who, in the year 1780, had burned the village, destroyed the fort and church, made slaves of all the Indians who had not time to escape, and retired with their captives, without being molested. This event had so much alarmed the inhabitants, that they dared no longer apply themselves to any kind of industry. The lands accordingly are almost in a state of nature, and the parish is so poor, that we could not purchase more than a dozen fowls, and a small hog, except that the curate sold us a young ox, assuring us it was the eighth part of the only herd in this parish, the lands of which are ploughed by buffaloes. 1787. February.

The priest was a young Indian mulatto, who, regardless of it's condition, resided in the wretched edifice I have described. A few earthen pots and a matrass composed the whole of his furniture. His parish, he told us, contained about two hundred persons of both sexes and every age, ready, on the slightest alarm, to conceal themselves in the woods to escape from the Moors, who still make frequent descents on the coast ; and who are so audacious, and their enemies so inattentive, that they often penetrate to the extremity of Manilla Bay. During our short stay at Cavite, seven or eight Indians were carried off in their canoes, at less than a league from the entrance of the port. We were assured, that the boats from Cavite to Manilla were frequently taken by these same Moors, though the passage is in every respect similar to that between Brest and Landernau by sea. They make these expeditions in very light row boats, to which the Spaniards oppose only an armament of galleys, which can scarcely move, and which have accordingly never taken any of them.

The next officer to the curate is an Indian, who bears the pompous title of *alcaide*, and has the supreme honour of carrying a cane with a silver head. He appears to exercise a considerable authority ; for no person had the right to sell us a fowl till he had granted his permission and fixed the price. He enjoyed also the odious privilege of the exclusive

1787. sale of tobacco on government account, of which these Indians smoke a
February. very considerable quantity. This impost has not been established more than a few years, and the poorest of the people can with difficulty support it's oppression. It has already occasioned several revolts, and I should not be surprised if it were to produce the same consequences here as that of stamps and tea in North America. We saw at the house of the curate three small antelopes, which he intended for the governor of Manilla and refused to sell to us. We had no reason to suppose, however, we could have preserved them alive, for this little animal is extremely delicate, and does not exceed the size of a large rabbit. The male and female are precise miniatures of the stag and the hind.

Our sportsmen saw in the woods some beautiful birds, the plumage of which was varied with the most lively colours; but these woods are impenetrable on account of the creeping shrubs with which the trees are everywhere interlaced. Their excursion was therefore very unproductive, since they could only shoot on the skirts of the wood. We purchased in the town several *stabbed* turtle doves, a name which has been given to these birds from a red spot in the middle of the breast, which exactly resembles a wound made by a knife.

25. We embarked at the close of the evening, and made every preparation for sailing the next day. One of the two Spanish vessels, which we had seen on the 23d under Point Capones, had, like us, put into Marivelle, to wait for more moderate breezes. I requested a pilot of the captain, and he sent me his boatswain's mate, an old Indian, who seemed to have little claim to my confidence, but to whom nevertheless I agreed to give fifteen dollars to conduct us to Cavite. On the 25th at day-break we set sail, and stood through the southern passage; the old Indian having assured us, that our attempts by the northern one would be vain, the currents always setting to the westward. Though the distance from the harbour of Marivelle to that of Cavite is only seven leagues, we were three days in making this little run, anchoring every evening in the bay upon a good muddy bottom. We had occasion to observe, that M^r Daprès's plan is far from ex-

act. The island of Fraile, and that of Cavallo, which form the entrance of the southern passage, are badly laid down, and in general the whole abounds with errors. But it would have been better to have followed even this guide, than have trusted to the Indian pilot, who had nearly run us aground on the shoal of St Nicholas. He persisted in continuing to stand on to the southward, in spite of my representations, and we fell in less than a minute from seventeen fathoms to four. I instantly put about, and am convinced, that we should have grounded, if I had kept onward a pistol-shot farther. The sea is so smooth in this bay, that there is no sign of the shoals; but a single observation renders it easy to work into it. The island de la Monha must be kept constantly in sight through the northern passage of the island of Marivelle, and as soon as this island begins to be shut in it is necessary to put about.

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At length, on the 28th, we anchored in the harbour of Cavite in three fathoms, muddy bottom, at the distance of two cables length from the town. Our passage from Macao to Cavite was twenty-three days, and would have been much longer, if we had conformed to the practice of the ancient Portuguese and Spanish navigators, and had persisted in passing to the north of Pratas.

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CHAPTER XV.

Arrival at Cavite—Reception by the Commandant of the Place—M. Boutin is sent to Manilla to wait on the Governor-General—His Reception—Account of Cavite and its Arsenal—Description of Manilla and its Environs—Its Population—Disadvantages arising from the Government established there—Penances of which we were Witnesses during Passion Week—Duty on Tobacco—Institution of the new Philippine Company—Reflections on this Establishment—Account of the Islands to the South of the Philippines—Continual War with the Moors or Mahometans of these different Islands—Stay at Manilla—Military State of the Island of Luconia.

1787. WE had scarcely anchored at the entrance of the harbour of Cavite, February. when an officer came on board from the commandant of the place, to request us to have no communication on shore till the arrival of orders from the governor-general, to whom he intended to dispatch a courier as soon as he should be informed of the motives of our arrival. We replied, that we only wanted provisions, and permission to refit our frigates, and that we should continue our expedition as speedily as possible: but before the departure of the Spanish officer, the commandant of the bay * arrived from Manilla, whence our ships had been perceived. He informed us, that the government had heard of our arrival in the Chinese seas, and that the letters from the Spanish ministry had announced us to the governor-general several months before. He added, that the season was favourable for anchoring before Manilla, where we should find every accommodation and resource which it was possible to procure at the Philippines. But we were at anchor before an arsenal, at the distance of a musket-shot from the shore, and we were perhaps deficient in politeness in observing

* The commandant of the bay is in Spain the chief commissioner of the customs, and possesses a military rank. At Manilla he ranks as captain.

to this officer, that nothing could compensate for these advantages. He consented that our lieutenant, M^r Boutin, should accompany him in his boat, to give an account of our arrival to the governor-general, and request him to give orders that our different wants might be supplied before the 5th of April; the final plan of our voyage requiring that the two frigates should be under sail the 10th of the same month. M^r Basco, brigadier of the navy, and governor-general of Manilla, gave to my lieutenant the most obliging reception, and issued the most positive orders that nothing should retard our departure.

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He also wrote to the commandant of Cavite, begging him to permit us to have free communication with the place, and to procure us every assistance and refreshment in his power. The return of M^r Boutin, charged with dispatches from M^r Basco, rendered us citizens of Cavite. Our vessels were so near the shore, that we could land and return on board every minute. We found convenient houses in which to repair our sails, salt our provisions, build two boats, accommodate our naturalists and geographical engineers; and for the purpose of erecting our observatory, the worthy commandant lent us his own house. We enjoyed as perfect liberty as if we had been in our own country, and we found in the market, and at the arsenal, the same resources as we should have done in one of the best ports in Europe.

Cavite, which is three leagues to the south-west of Manilla, was formerly a considerable place; but in the Philippines, as in Europe, the large towns drain in a great measure the smaller, and there remain at present only the commandant of the arsenal, a contador, two lieutenants of the harbour, the commandant of the place, with a garrison of a hundred and fifty men, and their officers.

All the other inhabitants are mulattoes or Indians, employed in the arsenal, and who form with their families, which are usually very numerous, a population of about four thousand souls, distributed in the town and the

1787. suburb St Roch. There are two parishes, and three convents for men,
February. each of which is occupied only by two monks, though thirty might conveniently be accommodated. The Jesuits formerly possessed a very handsome house here, which the commercial company lately established by the government has taken into its own hands. In general, nothing is to be seen but ruins. The ancient stone edifices are abandoned, or occupied by Indians who do not repair them; and Cavite, the second town of the Philippines, and the capital of a province of the same name, is at present a wretched village, with no other Spaniards than the civil and military officers. But though the town presents only ruins to the eye, this is by no means the case with the harbour, M^r Bermudès, brigadier in the navy, who commands there, having established an order and discipline, which render it an object of regret that his talents have been exercised on so diminutive a theatre. All his workmen are Indians, and the workshops precisely like those in our European arsenals. This officer, who is equal in rank to the governor-general, finds no detail beneath his attention, and his conversation proved to us, that there was probably no subject to which his talents were not adequate. Every thing we asked was granted in the most obliging manner. The smiths, blockmakers, and riggers, were employed in our service for several days. M^r Bermudès anticipated our desires, and his friendly attentions were the more flattering, as he appeared not in the habit of granting them; and this austerity of principle, which was a part of his character, had perhaps been prejudicial to his military advancement. As we could not flatter ourselves with the hope of finding elsewhere so commodious a port, M^r de Langle and myself determined to overhaul our rigging completely, and to strip our lower masts. This precaution could be attended with no loss of time, because we were obliged to wait at least a month for the different provisions, for which we had applied to the intendant of Manilla.

March. Two days after our arrival at Cavite I embarked for the capital with M^r de Langle, accompanied by several officers. We employed two hours and a half in this passage in our boats, which were well armed, on account of the Moors, with whom the bay of Manilla is frequently infested.

Our first visit was to the governor, who retained us to dinner, and appointed his captain of guards to conduct us to the houses of the archbishop, the intendant, and the different *oidors*. This was by no means the least fatiguing day we had experienced. The heat was extreme, and we were on foot in a town, where none of the inhabitants ever go out except in a carriage; but carriages are not to be hired here as at Batavia, and, but for Mr Sebir, a French merchant, who, hearing by accident of our arrival, sent us his carriage, we should have been obliged to decline many of the visits we had intended to make.

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The town of Manilla, including the suburbs, is very considerable. It's population is estimated at thirty-eight thousand souls, among whom are included a thousand, or, perhaps, twelve hundred Spaniards. The rest are mulattoes, Indians, or Chinese, who cultivate all the arts, and exercise every species of industry. The poorest Spanish families have one or two carriages, and sometimes more; the price of a pair of good horses is thirty dollars; and the board and wages of a coachman six dollars a month, so that there is no country in which the expence of a carriage is equally inconsiderable, or the use of it more necessary.

The environs of Manilla are delightful. They are watered by a fine river, that branches into different streams, of which the two principal lead to the famous lagoon, or lake of Bahia, which is seven leagues within the country, and bordered by more than a hundred Indian villages, situate in the midst of a most fertile soil. Manilla itself, which is built on the banks of a bay of the same name, is more than five and twenty leagues in circumference, lies at the mouth of a river, which is navigable as far as the lake from which it derives its source, and is, perhaps, one of the most happily situated towns in the world. Every article of food is found there in the greatest abundance, and at the most moderate price; but the price of clothes, European toys, and furniture, is extremely exorbitant. The want of emulation, with prohibitions and restraints of every kind upon commerce, render the productions and merchandise of India and China at least as dear as in Europe; and this colony, though the

1787. different imposts produce a revenue of near eight hundred thousand dol-
March. lars, nevertheless costs the mother country annually fifteen hundred thousand livres *, which are sent from Mexico. The immense possessions of the Spaniards in America have prevented the government from essentially applying it's attention to the Philippines, which resemble the estates of those great lords, whose lands remain uncultivated, though they would make the fortune of a number of families.

I do not hesitate to affirm, that a powerful nation, in possession of no other colony than the Philippines, and which should establish there the best government these islands are capable of, might look without envy at all the European settlements both of Africa and America.

The population of these different islands amounts to three millions of inhabitants, of which Luconia contains nearly a third; and the people appear to me to be in no respect inferior to Europeans. They cultivate the earth with abundant skill, and are good carpenters, joiners, smiths, gold-workers, weavers, masons, &c. I have visited their towns, and have found them benevolent, hospitable, and communicative; and though the Spaniards speak of and treat them with contempt, I have observed, that the vices of which they accuse them are to be imputed to the government they have established among them. It is well known, that the avidity of gold, and the spirit of conquest, with which the Spaniards and Portuguese were animated two centuries ago, caused adventurers of both these nations to traverse the different seas, and visit the islands of the two hemispheres, with no other view than to procure that precious metal.

Some auriferous streams in the neighbourhood of the Spice Islands, no doubt, determined the first establishments in the Philippines; but the produce did not correspond with the hopes that were entertained. To these motives of avarice succeeded the enthusiasm of religion. A great number of monks of every order were sent out to preach Christianity, and the harvest was so abundant, that eight or nine hundred Christians

* £.6250.

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were soon reckoned in these different islands. Had this zeal been enlightened by a small portion of philosophy, the conquest of the Spaniards could not have been better secured than by this system, and the establishment would have been rendered useful to the mother country. But their object was to make Christians, not citizens. The colony was divided into parishes, and subjected to the most frivolous and extravagant rules. Every fault, every sin of every kind, is still punished with the whip. Omission of attendance at prayers and mass is entered in a book, and the punishment inflicted, both on the men and the women, by order of the curate, at the door of the church. Festivals, religious assemblies, and private devotions, occupy a very considerable portion of time; and as the imagination is more fervent in hot than in temperate climates, I have seen, during passion week, masked penitents dragging chains in the streets, their legs and loins surrounded with a girdle of thorns, receiving at the gates of the churches, or before the oratories, several strokes of discipline, and, in a word, submitting to penances no less rigorous than those of the fakirs of India. These practices, more calculated to form enthusiasts than men of true piety, are at present forbidden by the archbishop of Manilla, but it is probable, that certain confessors still advise, if they do not actually order their infliction.

To this monastic discipline, which enervates the mind and too powerfully persuades this people, already indolent by the influence of climate and want of motives to industry, that the present life is a mere passage, and that the goods of this world are useless, is added the impossibility of selling the produce of the earth to that advantage which compensates the labour of man. Hence, when all the inhabitants have the quantity of rice, sugar, and vegetables, necessary for their subsistence, the rest becomes of no value; and in such circumstances sugar has been sold at less than a penny a pound, and the rice has been left on the ground without being cut. It would be difficult for the most unenlightened society to form a system of government more absurd than that which has been observed for two centuries past in these colonies. The port of Manilla, which ought to be free to all nations, till lately has been shut to

1787. Europeans, and open only to some Moors, Armenians, or Portuguese of
 March. Goa. The most despotic authority is confided to the governor, and the council, which ought to moderate it, is in this respect totally impotent. He is able, not of right indeed, but in fact, to receive or confiscate the merchandise of foreigners, whom the hope of profit has led to Manilla, and who expose themselves to this risk solely from the expectation of enormous profits, ruinous to the consumer. No one possesses there the least liberty. The inquisitors and the monks superintend the consciences of men; the *oidors* all private affairs; and the governor the most innocent amusements; a walk into the interior of the island, or a private conversation, not being exempt from his controul and jurisdiction: and thus the most charming country in the universe is certainly the last which a lover of liberty would chuse for his residence.

I have seen at Manilla that upright and virtuous governor of the Lardones, Mr Tobias, who, unhappily for his repose, has been too much celebrated by the abbé Raynal. I have seen him persecuted by the monks, who have alienated the affections of his wife, by representing him as a wretch destitute of piety; and she has even demanded to be separated from him, that she might not live with a pretended reprobate, and all the fanatics have applauded her resolution. Mr Tobias is lieutenant-colonel of the regiment which forms the garrison of Manilla, and is known to be the best officer in the country: yet the governor has ordered, that his appointments, which are considerable, should be paid to this pious wife, leaving him only twenty-six dollars per month, for his own subsistence and that of his son. This brave soldier, reduced to despair, was waiting for a proper opportunity to quit the colony, in order to obtain justice. There is a wise law, intended for moderating this excessive authority, but it is unfortunately without effect, by which any person aggrieved may prosecute the ex-governor before his successor. The latter, however, is interested in excusing every thing which may be brought against his predecessor, and the citizen who should be so rash as to complain would be exposed to new and still more intolerable vexations.

The most galling distinctions are established and maintained with the harshest severity. The number of horses which may be harnessed to carriages is fixed for every rank of persons. Those which have the greatest number take precedence, and must never be out-stripped; so that the mere caprice of an oïdor may detain in a file behind his carriage all those which have the misfortune to be on the same road. So many vices in this government, and so many vexations which are the consequence, have however not been sufficient entirely to destroy the advantages of the climate; and the peasants have an air of happiness not to be seen in the villages of Europe. Their houses are wonderfully neat, and are shaded by fruit-trees which grow spontaneously. The tax paid by each head of a family is very moderate, amounting only to five reals and a half*, including the dues of the church, which are received by the public. All the bishops, canons, and curates, have salaries from government; but they have established certain perquisites to compensate for their smallness.

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A terrible scourge, however, has lately arisen, which threatens to destroy among these people their remaining portion of happiness. This is the tax on tobacco. Their passion for smoking this narcotic is so immoderate, that there is not an instant in the day in which either a man or woman is without a segar†. Even children who have scarcely quitted their cradle contract this habit. The tobacco of the island of Luconia is the best in Asia. Formerly every one cultivated enough for his use in the vicinity of his residence, and by the small number of foreign vessels which are permitted to touch at Manilla, it was exported to every quarter of India. But within a few years a prohibitory law has been instituted; the tobacco of each individual has been rooted up, and the growth of this article confined to fields, where it is cultivated on the national account. The price is fixed at half a dollar a pound; and though the consumption is prodigiously diminished, the daily pay of a workman is not sufficient to procure tobacco for himself and his family. The inhabitants generally agree, that

* About half a crown, the value of the real being five-pence halfpenny. T.

† A small roll of the leaves of tobacco, which is smoked without the assistance of a pipe. (French Editor.)

1787. a tax of two dollars, added to the capitation already imposed, would have
 March. produced a sum equal to that of the sale of tobacco, and would not have occasioned the disorders of which the present tax has been productive; for insurrections have threatened every part of the island, and troops have been employed to suppress them. An army of custom-house officers is kept in pay to prevent smuggling, and to force the consumers to apply to the national warehouses. Of these officers several have been massacred: but, though their death has been speedily avenged by the tribunals, which pass judgment on the Indians with much fewer formalities than on the other citizens, a leaven still remains, to which the smallest fermentation might give the most dreadful activity; and there is no doubt that an enemy, who entertained the project of a conquest, would find an army of disaffected ready to join his standard the moment he should land, and should put arms into their hands*. If the Spanish government were to adopt a better con-

* From their extent, their climate, and the nature of their soil, the Philippines have the means of producing every colonial commodity. They afford the precious metals, and their position is advantageous, above all other islands, for trading with India and China. Whatever European nation should establish itself there in a solid manner, and possess a port on the coast of Africa, Madagascar, or in the neighbouring seas, for stores and refreshments, might resign without regret its possessions in America. This important property does not seem to be estimated at its just value by the Spanish government; but this apparent indifference, undoubtedly, arises from the difficulty of supporting its immense possessions in the two hemispheres, and the want of power to put them into such a state of activity as would afford all the benefit which the mother country has a right to expect.

The Philippines, therefore, may be an object of desire to the other maritime powers of Europe; and if the enemies of Spain do not profit by the state of weakness in which they are suffered to remain, they will hereafter become the prey of the Malays.

When the metallic treasures and productions of the soil of the South-sea islands shall be better known, when the new paths opened to trade shall allow of a safe and speedy communication to the centre of that ocean, the importance of the Philippines will be fully perceived. The Spaniards, who have already a settlement on the Bashee Islands, will soon have another in the Sandwich Islands, though situate a little to the north of the ordinary course of the galleons; and their possessions, if suffered to extend themselves, will form a kind of chain round the earth. The Russians will be aware of all the advantages they may derive from the South-sea commerce; and all their maritime views will be directed towards the ports of Kamtschatka.

This state of things, however, will only endure till the energy of the people, who cover this part of the globe, shall set bounds to these impolitic extensions; shall resume their natural rights; and expel the Europeans, in order freely to trade with all the world. But this period is still remote; and before it arrives, the Spaniards, as the abbé Raynal has foretold, enfeebled by their numerous possessions, which they are unable effectually to protect, will be successively driven from their establishments by some more powerful nation. (French Editor.)

stitution for the Philippines, the picture that might be drawn of the state of Manilla a few years hence, would be very different from its present condition. The earth refuses none of the most valuable productions; nine hundred thousand individuals of both sexes in the island of Luconia might be encouraged to cultivate them; and the climate admits of ten crops of silk in the year, while that of China scarcely affords the promise of two.

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Cotton, indigo, the sugar-cane, and coffee, grow without cultivation beneath the feet of the natives, who disregard them; and every thing conspires to show, that their spices would not be inferior to those of the Moluccas. A perfect freedom of trade for all nations would secure a market that would encourage every species of cultivation; and a moderate duty on all exportations would be sufficient, in a very few years, to defray all the expences of government. Religious toleration, with a few privileges, granted to the Chinese, would soon draw to this island a hundred thousand inhabitants from the eastern provinces of that empire, who are driven away by the tyranny of the Mandarins. If to these advantages the Spaniards should add the conquest of Macao, their establishments in Asia, and the benefits which their trade would derive from them, would certainly be more considerable than those of the Dutch at the Moluccas and at Java. The institution of the new Philippine company seems to announce, that the attention of government is at length turned towards this part of the world. It has in part adopted the plan of cardinal Alberoni. That minister was aware, that Spain, having no manufactures, would do better to enrich the Asiatic nations with her precious metals, than those of Europe, who were her rivals, and whose commerce and power she increased by consuming the articles of their industry. He therefore thought, that an open mart ought to be established at Manilla for all nations; and was desirous of inviting the different merchants of Spain to repair to this emporium, in order to purchase the different fabrics of India or China, which might be necessary for the consumption of the mother country and the colonies.

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It is well known, however, that Alberoni had more genius than information. He was acquainted with the situation of Europe; but had not of Asia the slightest idea. The objects of greatest consumption for Spain and her colonies are the produce of Bengal and the coast of Coromandel; which it is certainly as easy to bring to Cadiz as to Manilla, the latter being placed at a great distance from that coast, while it's seas are subject to monsoons which expose navigators to considerable losses and delays. The difference of price between India and the Manillas would thus be at least fifty per cent.: and if to this be added the immense expence of armaments fitted out for the protection of so distant a country, it will be seen, that the produce of India from the depôt of Manilla must be sold very dear in Spain, and still dearer in her American colonies; and that nations like England, Holland, and France, which carry on a direct trade, might always introduce them in a contraband way, with the greatest advantage. It is, however, on this defective plan, that the foundation of this new company has been laid, and what is worse, with restrictions and prejudices, which render it still more exceptionable than that of the Italian minister. In a word, the institution is such, that in my opinion it cannot possibly subsist longer than four years, though it's privilege has in a manner absorbed the whole trade of the nation with it's American colonies. The pretended emporium of Manilla, where the new company must supply itself, is open only to the Indian nations, as if the projectors feared to increase the number of sellers, and to obtain the cotton manufactures of Bengal at too low a price.

It may also be remarked, that these pretended Moorish, or Armenian, or Portuguese vessels from Goa, bring only English goods; and as the different modes of deception require new expences, the charge of these also falls upon the consumers; so that the difference of price between Manilla and the Indies is not merely fifty, but sixty, and perhaps eighty per cent. To this vicious arrangement is joined that of the right, which the company enjoys, of purchasing exclusively the productions of Luconia, whose industry, not being stimulated by the competition of buyers, will continue in the same state of inactivity to which, for two centuries past, it has totally owed it's

insignificance. As others have sufficiently treated of the civil and military government of Manilla, I have thought fit to exhibit the settlement in this new light, which the establishment of the new company has perhaps rendered interesting in an age, in which it is the duty of every man, destined to occupy a certain rank in the state, to be acquainted with the theory of commerce.

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The Spaniards have several establishments in the islands to the southward of Luconia; but they seem merely to be on sufferance there, and their situation at Luconia does not engage the inhabitants of those islands to acknowledge their sovereignty: on the contrary, they are always at war with them. These pretended Moors, of whom I have spoken, who infest their coasts, make such frequent descents, and carry into slavery the Indians of both sexes subject to the Spaniards, are the inhabitants of Mindanao, Mindoro, and Panay, who acknowledge no other authority than that of their princes, called sultans, with the same impropriety as the people themselves are called Moors. They are in fact Malays, who embraced Mahometanism nearly at the period when Christianity first began to be preached at Manilla. The Spaniards have denominated them Moors, and their sovereigns sultans, merely from the identity of their religion with that of the African people of the same name, and who have been enemies of Spain for so many centuries.

The only military settlement of the Spaniards in the Southern Philippines is that of Samboangan in the island of Mindanao, where a garrison is maintained of a hundred and fifty men, under the command of a military governor, who is appointed by the governor-general of Manilla. In the other islands there are only a few villages, defended by wretched fortifications, served by militia, and governed by alcaides, who are also appointed by the governor-general, but are eligible from every class of citizens, who are not enrolled as soldiers. The true masters of the different islands in which these Spanish villages are situate would soon destroy them, if they had not a considerable interest in their preservation. These Moors are at peace in their own islands; but they send vessels to commit depre-

1787. March. datations on the coasts of Luconia, and the alcaides purchase a great number of the slaves taken by these pirates, which saves them the trouble of sending them to Batavia, where they would sell for a much lower price. The weakness of the government of the Philippines is more apparent from these details, than from all the reasonings of different travellers; and the reader will perceive, that the Spaniards are too feeble to protect the commerce of their possessions, and that all the benefits they have yet conferred on these people relate to the concerns of another life, and have in reality no other object in view.

We staid only a few hours at Manilla; and the governor having taken leave of us immediately after dinner, to enjoy his *siesta* or afternoon's nap, we were at liberty to wait upon Mr Sebir, who rendered us the most essential services during our stay in the bay. This merchant, who was by far the best-informed Frenchman I had met with in the Chinese seas, had supposed that the new company of the Philippines, and the intimate connexion of the cabinets of Versailles and Madrid, would have procured him the means of extending his speculations, which were cramped by the establishment of the French East-India company. He had accordingly settled his affairs at Canton and Macao, where he had been established for several years, and had formed a commercial house at Manilla, where he interested himself in the decision of a very important law-suit, in which one of his friends was materially concerned. But he already perceived, that the prejudices against strangers, and the despotism of the administration, would form an invincible obstacle to his views; and at the time of our arrival he was disposed to contract rather than extend his undertakings.

We returned to our boats at six in the evening, and at eight were on board our frigates: but fearing, while we were employed at Cavite in the repair of our ships, that the flour and biscuit contractors, &c. would make us victims of the usual tardiness of the merchants of their nation, I thought proper to appoint an officer to reside at Manilla, in order to visit every day the several agents to whom the intendant had recommended us. I made choice

of M^r Vaujuas, lieutenant of the *Astrolabe* : but this officer soon wrote to inform me, that his residence at Manilla was useless, as M^r Gonsoles Carnagual, intendant of the Philippines, was so careful of our interests, that he every day went himself to observe the progress of the workmen who were employed on our account, and was no less active than if he had belonged to the expedition. His obliging and assiduous attentions demand from us this public expression of our gratitude. His cabinet of natural history was open to all our naturalists, to whom he gave part of his collections, in each of the three kingdoms of nature ; and at the moment of our departure, I received from him a complete double collection of the shells which are found in the Philippine seas : his desire to serve us being directed to every thing which could in the least interest our pursuits.

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A week after our arrival at Manilla I received a letter from M^r Elstockenstrom, principal supercargo of the Swedish East-India company, informing me, that he had sold our sea-otter skins for ten thousand dollars, and authorising us to draw on him for the amount. I was extremely desirous of procuring this money, in order to distribute it among the crews, who, having left Macao without receiving it, were fearful their hopes would never be realised. As M^r Sebir had at that time no remittance to make to Macao, we had recourse to M^r Gonsoles, to whom every affair of this kind was in reality foreign, but who used the influence of his amiable character with the different merchants of Manilla, to engage them to discount our bills, which they did, and the produce arising from them was divided among the seamen before our departure.

The excessive heats of Manilla began to produce some unfavourable effects on the health of our people. Several were attacked with colics, which were followed, however, by no bad consequence. But M^{esses} Lamanon and Daigremont, who had brought from Macao a beginning dysentery, occasioned probably by suppressed perspiration, were so far from finding relief at this place, that they grew worse, and to such a degree that, the twenty-third day after our arrival, M^r Daigremont was without hope, and died on the twenty-fifth. He was the second person who had been

1787. thus lost by sickness on board the *Astrolabe*; while on board the *Boussole*
 March. no misfortune of this kind had yet happened, though our people in general had enjoyed perhaps a less favourable state of health than those of the other frigate. It must be observed, however, that the servant who died in the passage from Chili to Easter Island, was consumptive when he came on board; and M^r de Langle, in taking him, had yielded solely to the desire of his master, who flattered himself that the air of the sea and a warmer climate would effect his cure. With regard to M^r Daigremont, in opposition to medical advice, and unknown to his friends, he had attempted to cure himself with burnt brandy, pimento, and other remedies, which the strongest man could not have resisted, and he fell a victim to his own imprudence, misled by the too high opinion he had entertained of the strength of his constitution.

28. On the 28th of March all our works were finished at Cavite, our boats built, our sails repaired, the rigging examined, both vessels completely caulked, and our salt provisions barrelled up. This last business we did not think proper to entrust to the store-keepers of Manilla, knowing that the salt provision of the galleons never kept good for more than three months, and we had beside the greatest confidence in the method of captain Cook. Accordingly a copy of his process was put into the hands of each salter, and we superintended this new operation ourselves. We had salt and vinegar on board from Europe, and had nothing to purchase on this occasion but some hogs, which we obtained at a very moderate price.

The communications between Manilla and China are so frequent, that we received news from Macao every week; and we learned with the greatest astonishment that the *Resolution*, commanded by M^r d'Entrecasteaux, and the *Subtile* frigate, commanded by M^r la Croix de Castries, had arrived in the river of Canton. These vessels had left Batavia when the north-east monsoon was in it's force, had run to the eastward of the Philippines, coasted New Guinea, and traversed seas abounding with shoals, of which they had no chart, and at length, after a navigation of seventy days, had anchored in the river I have mentioned the very day

subsequent to our departure. The astronomical observations made during this voyage will be very important for the knowledge of those seas, which are always open to navigators who may have missed the monsoon; and it is astonishing to me, that our East-India company should have entrusted the command of the vessel, which this year lost her season, to a man ignorant of this track.

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At Manilla I received a letter from M^r d'Entrecasteaux, informing me of the motives of his voyage, and soon after the Subtile herself brought me other dispatches.

M^r la Croix de Castries, who had doubled the Cape of Good Hope in company with the Calypso, brought us the news of Europe; but the latest date was the 24th of April, and our curiosity had still to regret the interval of nearly a year. Our families and friends had beside not profited by this opportunity of writing, and from the state of tranquillity enjoyed by Europe, there was little to counterbalance, in public events, the hopes and fears by which we were individually agitated. We had, however, another opportunity of sending letters to France; and the Subtile was so well manned as to permit M^r la Croix de Castries to repair in part the loss of officers and soldiers which we had sustained in America. Accordingly M^r Guyet, an ensign, with four men, embarked on board the Boussole, and M^r le Gobien, a midshipman, with four others, on board the Astrolabe. This augmentation was extremely necessary; we had eight officers less than at our departure from France, including M^r de Saint-Ceran, whom, from the total derangement of his health, I was obliged to send back to the Isle of France in the Subtile, the surgeons having declared that it was impossible for him to continue the voyage.

In the mean time our provisions had generally been embarked at the period we had fixed; but passion week, which suspends all business at Manilla, having occasioned a delay in some particular articles, I was under the necessity of fixing my departure for Easter Monday. As the north-east monsoon, however, was still very strong, the sacrifice of three or

1787. four days could be of no prejudice to the expedition. On the 3d of April
 April. all our astronomical instruments were on board. From the period of our
 3. departure from France, M^r Dagelet had not found a more convenient place
 for ascertaining with precision the rate of going of our timekeeper, N^o 19,
 as our observatory had been fitted up in the garden of the governor,
 at the distance of about a hundred and twenty toises from our vessels.
 The longitude of Cavite, determined by a great number of lunar obser-
 vations, was $118^{\circ} 50' 40''$ east *, and it's latitude, taken with a three-foot
 quadrant, $14^{\circ} 29' 9''$ north. If the longitude had been determined
 from the daily loss attributed to this timekeeper at Macao, it would have
 been $118^{\circ} 46' 8''$; that is to say $4' 32''$ less than the result of our lunar
 observations.

Before we sailed, I thought it my duty to go with M^r de Langle to re-
 turn our acknowledgements to the governor-general for the speed with
 which his orders had been executed, and still more particularly to the in-
 tendant, from whom we had received so many distinguishing marks of
 kindness and friendship. Having discharged these duties, we both took
 advantage of a stay of forty-eight hours at the house of M^r Sebir, to visit,
 either in a boat or a carriage, the environs of Manilla. We met neither
 with sumptuous houses, nor parks, nor gardens; but unadorned nature is
 here so beautiful, that a simple Indian village on the bank of the river,
 or a habitation in the European style, surrounded by a few trees, forms a
 view more picturesque than that of our most magnificent mansions; and
 the coldest imagination could not but suppose happiness to be the atten-
 dant on this enlivening simplicity. The Spaniards, in general, are ac-
 customed to quit the town after the Easter holidays, and to pass the sea-
 son of the scorching heats in the country. They have not attempted to
 embellish a place which has no need of the assistance of art. A neat and
 spacious house, built on the banks of a stream, with suitable baths, but
 without avenues and gardens, and shaded only with a few fruit-trees, con-

* See the explanation of the method of computing the longitude, in the tables of the course of
 the frigates, from Manilla to Kamtschatka, by M^r Dagelet, at the end of the Voyage. (French
 Editor.)

stitutes the dwelling of the most opulent citizens ; and this country would be one of the most agreeable spots in the world to live in, if a more moderate government and fewer prejudices were better to secure the civil liberty of every inhabitant. The fortifications of Manilla have been augmented by the governor-general, under the direction of M^r Sauz, an able engineer ; but the garrison is far from numerous. In time of peace it is limited to a single regiment of two battalions of infantry, each composed of a single company of grenadiers, and eight companies of fusileers, the two battalions forming together thirteen hundred effective men. It is a Mexican regiment, of which all the soldiers are of the colour of mulattoes, but are said, in courage and skill, not to be inferior to the troops of Europe. There are beside two companies of artillery, commanded by a lieutenant-colonel, and composed each of eighty men, whose officers are a captain, a lieutenant, an ensign, and a supernumerary ; three companies of dragoons, forming a squadron of a hundred and fifty horse, commanded by the eldest of the three captains ; and, lastly, a battalion of twelve hundred militia, raised and formerly paid by a wealthy half-bred Chinese, named Tuasson, who was ennobled. All the soldiers of this corps are Chinese of mixed blood ; they perform the same duty in the town as the regular troops, and receive at present the same pay ; but they would be a weak dependence in time of war. In case of emergency, eight thousand militia can quickly be raised, divided into provincial battalions, and commanded by European or Creole officers. Each battalion has a company of grenadiers. Of these companies one has been disciplined by a serjeant from the regiment at Manilla ; and the Spaniards, though more disposed to undervalue than exalt the bravery and merit of the Indians, affirm, that it is in no respect inferior to those of the European regiments.

1787.

April.

The little garrison of Samboangan, in the island of Mindanao, is not included in that of the island of Luconia. Two corps, of a hundred and fifty men each, have been raised for the defence of the Ladrone islands, and the island of Mindanao, and are invariably attached to those colonies.

CHAPTER XVI.

Departure from Cavite—Meet with a Bank in the middle of the Channel of Formosa—Latitude and Longitude of this Bank—We anchor two Leagues in the offing opposite the ancient Fort of Zealand—We set sail again the next day—Account of the Pong-bou, or Pescadore Islands—We make the Island of Botol Tabaco-xima—and run along the Island of Kumi, which makes a Part of the Kingdom of Liqueo—The Ships enter the Japanese Sea, and sail along the Coast of China—We steer our Course for the Island of Quelpaert—We run along the Coast of Corea, and make astronomical Observations every day—Particulars respecting Quelpaert Island, Corea, &c.—Discovery of Dagelet Island—It's Longitude and Latitude.

1787.
April.
9.

THE 9th of April, by our reckoning, and the 10th by that of the Manillese, we set sail with a fine breeze from the north-east, which gave us hope of doubling all the islands in the different channels of Manilla bay before night. Before we got under way, Mr de Langle and I received a visit from Mr Bermudès, who assured us, that the north-east monsoon would not change for a month, and that it was still later on the coast of Formosa; the continent of China being in some measure the source of the north winds, which reign more than nine months of the year on the coasts of this empire. But our impatience would not allow us to listen to the advice of experience: we flattered ourselves with the hope of some fortunate exception from the general rule: different years might have different periods for the change of the monsoons: and accordingly we took leave of him. Slight variations in the wind enabled us soon to get to the north of the island of Luconia.

We had scarcely doubled Cape Bujador, when the wind settled in the north-east, with an obstinacy, which too well convinced us of the truth of the

observations of Mr Bermudès. I flattered myself, though faintly, that we should find the same variations under the island of Formosa, as under that of Luconia. The proximity of the continent of China, I was aware, rendered this little probable: but at all events we could only wait for the change of the monsoon; as our ships, which were sheathed and filled, sailed too badly to permit us to hope, that we should get to the north with contrary winds.

1787.
April.

We made the island of Formosa on the 21st of April. In the channel between it and Luconia we found very strong tideways; but it appeared, that they were occasioned by a regular ebb and flow, for our reckoning never varied from our observations either of latitude or longitude. On the 22d I set the island of Lamay, which lies off the south-west point of Formosa, east by south, distant about three leagues. The sea ran very high, and the appearance of the coast induced me to think, that I should get to the north more easily, if I could approach the coast of China. The wind from the north-north-east allowed me to steer north-west, and thus gain in latitude; but in the middle of the channel I observed the sea greatly changed. We were then in the latitude of $22^{\circ} 57'$ north, and to the westward of the meridian of Cavite, being in the longitude of $116^{\circ} 41'$ east. By the lead we had twenty-five fathoms of water, sandy bottom, and, four minutes after, nineteen fathoms only. Such a rapid decrease in the depth made me suppose, that these could not be the soundings of the Chinese coast, from which we were upward of thirty leagues distant, but that of a bank not laid down on the charts. I continued sounding, and soon found only twelve fathoms. I then tacked, and stood towards the island of Formosa, but the bottom continued equally irregular. On this I thought it proper to come to an anchor, and made a signal to the Astrolabe for the purpose. The night was fine, and at day-break we perceived no breaker on any side of us. I then directed the ships to get under way, and steer north-west by west towards the continent of China; but at nine in the morning our soundings being twenty-one fathoms, and the next minute eleven fathoms rocky bottom, I thought it imprudent to pursue so dangerous a search, as our boats sailed too badly to sound a-head of

21.

22.

1787. the ships, and give us notice of the bottom. Accordingly I resolved to
April. get out by the opposite point of the compass, and fixed the course south-east by east. We proceeded thus six leagues, on an irregular bottom of sand and rock, with soundings from twenty-four fathoms to eleven; and then the depth of water increased, till ten o'clock at night, when we could find no bottom, being about twelve leagues from the place where we tacked in the morning. This bank, the limits of which to the north-west we did not determine, is in the latitude of 23° north, longitude $116^{\circ} 45'$ east, taking the centre of the line we ran along; and the south-east extremity is in the latitude of $22^{\circ} 52'$, longitude $117^{\circ} 3'$. Perhaps it is not dangerous, as our least soundings were eleven fathoms; but the nature and inequality of the bottom render it very suspicious, and it is to be observed, that almost all these shoals in the Chinese seas, where they are very frequent, have points even with the water, which have occasioned many shipwrecks.

This tack brought us upon the coast of Formosa, near the entrance of the bay of the ancient fort of Zealand*, where is the city of Taywan, the capital of the island. I had been informed of the revolt of the Chinese colony, and I knew that an army of twenty thousand men, commanded by the santoc of Canton, was sent against it. The north-east monsoon, which was still in all its force, allowing me to sacrifice a few days for the satisfaction of hearing farther news on this subject, I anchored to the westward of the bay, in seventeen fathoms, though our boats found fourteen fathoms a league and half from the shore; but I knew, that we could not approach very near the island, that there were only seven feet of water in the port of Taywan, and that, when the Dutch were in possession of it, their ships were obliged to stop at the Pescadore islands, where there is a very good port, which they fortified. This circumstance rendered me very doubtful about sending a boat ashore, which I could not protect with my ships, and which probably would have appeared suspicious in the state of war in

* There is a plan of this fort annexed to a letter from father Meilla, the Jesuit. See the fourteenth collection of *Lettres édifiantes*. (French Editor.)

which the Chinese colony was. The most I could hope for would be, that the boat would be sent back without being allowed to land: if, on the contrary, it were detained, my situation would have been very embarrassing, and the burning of two or three shampan would have been a poor recompense.

1787.
April.

Accordingly I resolved to endeavour to entice on board some of the Chinese boats, that came near us. I showed them dollars, which appeared to me to have powerful attractions for these people; but the inhabitants of this place are probably forbidden to have the least intercourse with strangers. It was evident, they were not afraid of us; since they came within reach of our guns: but they refused to come on board. One boat alone had the courage; and we bought its fish at the price the owners thought proper to ask, that we might acquire a good reputation, if they durst avow, that they had had any dealings with us. It was impossible for us to guess at the answers these fishermen made to our questions, which they certainly did not understand. Not only has the language of this people no affinity whatever with those of Europe; but that kind of pantomimical language, which we have thought universal, is not a whit better understood; and an inclination of the head, which implies assent with us, has with them perhaps an opposite signification. This little experiment convinced me of the impossibility of satisfying my curiosity, supposing the boat I might send ashore should meet the most friendly reception; accordingly I resolved to sail the next day with the land breeze. Several fires lighted up on the coast, which appeared to me to be signals, led me to believe, that we had occasioned an alarm: but it was more than probable, that the Chinese and rebel armies were not in the neighbourhood of Taywan, where we had seen only a small number of fishing boats, which would have been otherwise employed on the eve of an action.

This, which was no more than a conjecture, soon became a certainty. The next day, the land and sea breezes having allowed us to get ten leagues to the northward, we perceived the Chinese army at the mouth of a large river, which is in the latitude of $23^{\circ} 25'$ north, and the banks of

1787. which stretch four or five leagues into the offing. Abreast of this river
April. we anchored, in thirty-seven fathoms of water, muddy bottom. It was impossible for us to count all the vessels: several were under sail, some were at anchor on the open coast, and a great number were seen in the river. The admiral's ship, covered with various flags, was the farthest in the offing; and came to an anchor in a line with the banks, a league to the eastward of our ships. When night came on, he hung out lights on all his masts, which served as a direction to several ships, which were still to windward. These vessels, being obliged to pass by us to join their admiral, took great care not to come nearer than within random shot, not knowing whether we were friends or enemies. The light of the moon enabled us to continue these observations till midnight; and we never more eagerly wished for fine weather, to see the end of the business. We had set the southern Pescadore islands west by north: it is probable, that the Chinese army, departing from the province of Fokien, had rendezvoused at the island of Pong-hou, the largest of the Pescadores, where there is a very good harbour, and had set off thence to begin it's operations.

We were unable to satisfy our curiosity, however, for the weather became so bad, that we were forced to get under way before day-break, in order to save our anchor, which it would have been impossible to have gotten up, if we had staid an hour longer. At four in the morning the sky became overcast, it blew a hard gale, and the horizon was so thick, we could not see the land. At day-break, however, I saw the Chinese admiral running for the river before the wind, with a few other shampan, which I could still distinguish through the fog. With my courses and top-sails close-reefed I stood for the offing. The wind was north-north-east, and I hoped to double the Pescadores by steering north-west; but, to my great astonishment, at nine in the morning I discovered several rocks, forming part of this cluster of islands, which bore from me north-north-west; and the weather was so thick, that we could not distinguish them till we were very near, the breakers around them being confounded with the waves, for the sea ran as high as I had ever seen it in my life. I therefore tacked, and stood for the island of Formosa; and three hours after, at noon, the

1787.
April.

Astrolabe, which was a-head, made the signal for twelve fathoms water, and put about. We sounded at the same moment, and found forty fathoms; so that in less than a quarter of a league distance the water shallows from forty fathoms to twelve; and it is probable, that it would shallow from twelve to two in a very short time, since the Astrolabe found only eight fathoms while she was going about, which probably did not take up four minutes. From this circumstance we learned, that the channel between the north-easternmost of the Pescadore Islands, and the banks of Formosa, was not above four leagues wide; of course it would have been dangerous to ply to windward in it during the night, in such tempestuous weather, when we could not see a league from the ship, and the sea ran so high, that every time we wore we were apprehensive of the sea's breaking completely over us. These different motives induced me to bear up, and run to the eastward of Formosa: as my instructions did not direct me to proceed through this channel, and I was too well convinced, that I could not have accomplished it before the change of the monsoon, a period which could not be far distant; and as this is always preceded by a very heavy gale, I thought it better to stand the shock of it in the open sea. Accordingly I shaped my course toward the southernmost of the Pescadore Islands, which bore west-south-west. Being obliged to adopt this measure, I resolved at least to reconnoitre these islands, as far as such weather would permit. We ran along them, therefore, at the distance of two leagues; and it appeared, that they stretch to the south as far as $23^{\circ} 12'$, though the chart of M^r Dap^rès places the southernmost $13'$ farther north. Of their limits to the north we are not so certain: the northernmost we saw was in the latitude of $23^{\circ} 25'$; but we are not certain that there are no more beyond this.

These islands are a heap of rocks, assuming all sorts of figures: one among them exactly resembles the tower of Cordouan, at the entrance of the river of Bourdeaux; and you would suppose, that it was cut by human hands. Among these islets we counted five islands of a middling height, which appeared like sandy downs. We could not perceive on them a single tree: but, it must be confessed, the badness of the weather that

1787. day renders our observations very doubtful. These islands must be known,
April. however, by the accounts of the Dutch, who fortified the island of Pong-hou, at the time when they were masters of Formosa. It is known, likewise, that the Chinese keep there a garrison of five or six hundred Tartars, who are relieved every year.

As the sea became much smoother under the shelter of these islands, we sounded several times. The bottom was sandy, but so uneven, that the Astrolabe, within a musket-shot of the land, had forty fathoms, when we had only twenty-four, and presently after we could find no bottom. As night approached, I directed our course south by east; and at day-break I altered it to east-south-east, to pass through the channel between Formosa and the Bashee Islands.

The next day we experienced a squall of wind as violent as that of the day before, but which continued only till ten at night. It was preceded by such a deluge of rain, as can be seen only between the tropics. The sky was in a blaze all the night: the most vivid lightnings flashed from every point of the horizon, yet we heard but a single clap of thunder. We ran before the wind, under the foresail and two topsails close-reefed, with the ship's head to the south-east, in order to double Vele-rete, which, from the bearing we took of the south point of Formosa before night, was four leagues to the eastward. We had the wind constantly north-west the whole night; but the clouds flew rapidly to the south-west, and a mist, which did not reach above a hundred toises above our heads, alone felt the impulse of the inferior current of air. I had made a similar observation for several days; and it served not a little to determine me to stand out to sea, during the crisis of nature, which the winds announced, and which the full moon rendered still more probable.

May.
1.

We lay in a dead calm all the next day, in mid-channel between the island of Botol Tabaco-xima and the Bashees. This channel is sixteen leagues over: our observations fixing the south-east point of Botol Tabaco-xima in $21^{\circ} 57'$ north latitude, and $119^{\circ} 32'$ east longitude. The

wind allowing us to approach within two miles of this island, I distinctly perceived three villages on the south coast, and a canoe appeared coming towards us. I could have wished to visit these villages, inhabited probably by people resembling those of the Bashee Islands, whom Dampier depicts as so good and hospitable; but the only bay, that promised to afford an anchorage, was open to the south-east winds, which appeared about to set in, as the scud flew swiftly from that quarter. In fact, about midnight, the wind settled in that point of the compass, and allowed me to steer north-east by north, which is the direction M^r Daprès gives to the island of Formosa as far as the latitude of $23^{\circ} 30'$.

1787.
May.

We had sounded several times as we approached Botol Tabaco-xima, and as far as within half a league of the land, without finding any bottom. Every thing indicates, that, if there be any anchoring ground, it must be very close to the shore. This island, on which no navigator, as far as is known, ever landed, may be four leagues in circumference. It is separated by a channel half a league wide, from an islet, or very large rock, on which a little verdure and a few shrubs are visible, but which is uninhabited, and indeed uninhabitable. The island itself, on the contrary, appears to contain a considerable number of inhabitants, since we reckoned three villages, and these not small, in the space of a league. It is well wooded, from a third part of it's height above the sea to it's summit, which appears to be crowned with large trees. The ground between these forests and the sand of the shore has a pretty rapid descent. It was beautifully green, and cultivated in several places, though furrowed by the gullies, which the torrents make in rushing from the mountains. I apprehend Botol Tabaco-xima may be seen at the distance of fifteen leagues in clear weather: but this island is very often enveloped in fogs; and it appears, that admiral Anson at first saw only the islet I mentioned above, which is not half so high.

After having doubled the island, we directed our course north-north-east, keeping a good look-out for land a-head during the night. A strong current, which set to the north, did not allow us to ascertain with

1787. accuracy the distance we ran ; but a very beautiful moonlight, and extreme attention, gave us no apprehension from sailing in the midst of an archipelago little known to geographers ; for we have no account of it but in a letter of father Gaubil, the missionary, who learned some particulars respecting the kingdom of Liqueo and it's thirty-six islands, from an ambassador of the king of Liqueo, with whom he was acquainted at Pekin.

May.

5. It is obvious how insufficient determinations of latitude and longitude from such data must be for the purposes of navigation ; yet it is always a great advantage to know the existence of islands and shoals in the seas in which we are. On the 5th of May, at one in the morning, we made an island, bearing north-north-east. The rest of the night we spent in plying under an easy sail, and at day-break I shaped my course so as to range along it's western coast at the distance of half a league. At this distance we sounded several times, without finding any bottom. We were soon certain that the island was inhabited, as we saw fires in several places, and herds of cattle grazing along the sea-shore. When we had doubled it's western point, which is the finest and best inhabited part, several canoes put off to look at us. They appeared to be extremely afraid of us ; for though their curiosity drew them within musket-shot of us, their fears made them instantly hasten away. At length our voices, our gestures, our tokens of peace, and the sight of some stuffs, induced two of the canoes to come alongside. I gave to each a piece of nankeen and a few medals. That they did not come off for the purpose of trade was evident, for they had nothing to offer us in exchange for our presents : but they fastened a bucket of fresh water to a rope, making signs, that they did not think themselves out of our debt, and that they would return on shore for some provision, which they expressed by putting their hands into their mouths. Before they came alongside the ship, they had laid their hands on their breasts, and stretched out their arms toward the sky ; and on our repeating these actions, they determined to come on board ; but it was with a mistrust which was never effaced from their countenances. They invited us, however, to approach the land, giving us to understand, that we should want nothing.

These islanders are neither Chinese nor Japanese, but, situate between the two empires, they appear to have some similitude to each. They were clothed in a shirt and drawers of cotton. Their hair was turned up on the crown of the head, and there rolled round a pin, which appeared to us to be gold. Each had a dagger, the hilt of which likewise was gold. Their canoes were formed only of trees hollowed out, and they managed them but badly. I could have wished to have landed at the island; but while we lay to, waiting for the canoes, the current set to the north with extreme rapidity, and we had drifted a great way to leeward, so that probably we should have tried in vain to get near it: beside, we had not a moment to lose, for it was of importance, that we should be out of the Japanese seas before the month of June, when the storms and hurricanes render these seas the most dangerous in the universe.

1787.

May.

It is evident, that ships in need of provision, wood, and water, might procure them at this island, and perhaps establish some trifling trade: but as it is only three or four leagues in circumference, it's population probably does not exceed four or five hundred persons, and a few gold pins are no proof of wealth*. I have not altered it's name of Kumi, by which it is marked on the chart of father Gaubil, where it is placed in a latitude and longitude differing little from those ascertained by our observations, according to which it is in $24^{\circ} 33'$ north, and $120^{\circ} 56'$ east. On this chart the island of Kumi is one of a cluster of seven or eight, of which it is the westernmost; and it is isolated, or at least separated from those that may be supposed to the east of it, by channels eight or ten leagues wide, for we could see that distance without perceiving any land. From the account father Gaubil has given of the large island of Liqueo, the chief of all that lie to the east of Formosa, I am greatly inclined to believe, that Europeans would gain admission into it, and perhaps would find a trade there as beneficial as that to Japan.

* M^r la Pérouse appears to have forgotten their daggers, which, if the hilts were of gold, seem to prove, that the island either furnished gold, or something with which gold could be purchased. T.

1787.
May. At one o'clock I crowded sail to the north, without waiting for the islanders, who had informed us by signs, that they would soon return with something to eat. We had still plenty of provision, and the fair wind invited us not to lose such valuable time. Continuing our course to the north with all sails set, we were out of sight of the island of Kumi when the sun went down, though the atmosphere was clear, and we could apparently see to the distance of ten leagues. During the night we kept under an easy sail; and at two o'clock in the morning, after having run five leagues, I brought to, supposing the currents might have carried us ten or twelve miles a-head of our reckoning.

At day-break we made an island bearing north-north-east, and several rocks or islets more to the east. I shaped my course so as to pass to the west of this island, which is circular, and well wooded on the western side. I ran along it at the distance of a mile, without finding any bottom, or perceiving any trace of a habitation. It is so steep, indeed, that I do not believe it to be habitable. Its extent may be a couple of miles in diameter, or two leagues in circumference. When we were abreast of it, we saw a second island, of the same size, equally covered with wood, and nearly of the same shape, though somewhat less lofty. It bore from us north-north-east; and between these islands there were five clusters of rocks, round which an immense number of birds were flying. To the latter I have retained the name of Hoapinsu; and to that farther to the north-east, the name of Tiaoyu-su; which were given by father Gaubil to these islands. They are to the eastward of the northern point of Formosa, and are placed on the chart much farther south, than they are from our observations of their latitude*. Be this as it may, our calculations place the island of Hoapinsu in the latitude of $25^{\circ} 44'$ north, and longitude $121^{\circ} 14'$ east; and that of Tiaoyu-su in the latitude of $25^{\circ} 55'$, longitude $121^{\circ} 27'$.

* The chart of father Gaubil exhibits a third island, to the north-west of Hoapinsu, under the name of Pongkiachan, and nearly at an equal distance from Tiaoyu-su. If this island exist, it is astonishing, considering la Pérouse's course, that he did not get sight of it. See *Lettres édifiantes*, collection the 28th. (French Editor.)

At length we were clear of the archipelago of the Liqueo Islands, and about to enter into a more spacious sea, between China and Japan, where some geographers assert the bottom is always to be found. This is very true; but we scarcely got so little as seventy fathoms of water, till we arrived in the latitude of $24^{\circ} 4'$, and from that latitude till we were beyond the channel of Japan, we were never out of soundings. The coast of China indeed is so flat, that in the latitude of 31° we had only twenty-five fathoms, when above thirty leagues from the land. On leaving Manilla, it was my intention to reconnoitre the entrance of the Yellow Sea, to the north of Nankin, if circumstances would allow me to spend a few weeks on this object: but it was of importance to the success of my subsequent schemes, to be at the entrance of the channel of Japan before the 20th of May, and on the northern coast of China I experienced hindrances, which would not allow me to make more than seven or eight leagues a day. The fogs then were as thick and constant as on the coast of Labrador; the wind faint, and variable only from the north-east to the east; we were often becalmed, and obliged to anchor, and make signals to keep together at anchor, because we could not see the Astrolabe, though within hail. The currents are so violent, that we could not keep a lead to the bottom, to ascertain that we did not drive; the tide, however, did not run above a league an hour, but its direction could not be calculated, for it changed every moment, and ran quite round the compass in twelve hours, without a single instant of slack water. In the space of ten or twelve days we had but one interval of fine clear weather, which gave us an opportunity of seeing an islet, or rock, in the latitude of $30^{\circ} 45'$ north, longitude $121^{\circ} 26'$ east: but the fog soon returned, and left us ignorant whether it were contiguous to the continent, or separated from it by a wide channel; for we never had sight of the coast, and our shallowest water was twenty fathoms.

1787.
May.

On the 19th of May, after a calm that had continued a fortnight, with a very thick fog, the wind fixed in the north-west, and blew very hard. The sky remained dull and whitish, but our horizon extended several leagues. The sea, which had hitherto been so smooth, ran very high. We were at anchor in twenty-five fathoms at the moment when it came

19.

1787. on. I made the signal for getting under way, and directed my course,
May. without losing an instant, north-east by east, for Quelpaert Island, which
was the first place of importance to be made before entering the channel
of Japan. This island, which is known to Europeans only by the loss of
the Dutch ship Sparrow-hawk in 1635, was at that time under the domi-
21. nion of the king of Corea. We got sight of it on the 21st of May, in the
finest weather possible, and under the most favourable circumstances for
lunar observations. The latitude of the southern point we ascertained to
be $33^{\circ} 14'$ north, and its longitude $124^{\circ} 15'$ east. I ran along the whole
of the south-east part at the distance of two leagues, and set with the
greatest care an extent of twelve leagues, the plan of which has been traced
by Mr Bernizet. (*Charts and Plates, No. 45.*)

It is scarcely possible to find an island of a more pleasing aspect. A peak about a thousand toises high, which may be seen eighteen or twenty leagues off, rises in the centre of the island, of which it is doubtless the reservoir. The land slopes from it gently to the sea, whence the houses appear as an amphitheatre. The soil appeared to us to be cultivated to a great height. By the help of our glasses we could see the divisions of the land, which is parcelled out into very small fields, a proof of a numerous population. The greatly varied tints, arising from the different kinds of cultivation, added to the beauty of the prospect. Unfortunately the island belongs to a people, to whom all intercourse with strangers is prohibited, and who retain in slavery all who have the misfortune to be wrecked on their shores. Some of the Dutch sailors of the Sparrow-hawk, after a captivity of eighteen years, during which they had received several bastinadoes, found means to steal away a bark, and get to Japan, whence they reached Batavia, and at length Amsterdam. This event, the narrative of which we had before our eyes, was little calculated to induce us to send a boat ashore. We perceived two canoes come off; but they never ventured within a league of us, and it is probable, that their object was merely to observe our motions, and perhaps give the alarm on the coast of Corea.

Till midnight I continued my course north-east by east; and then I lay

to till day-break, which was dull, but the fog was not thick. The north-east point of Quelpaert Island was in sight, bearing west; and I fixed my course north-north-east, to approach the coast of Corea. We did not neglect to heave the lead every hour, but found uniformly sixty or seventy fathoms. At day-break we saw several islands, or rocks, forming a chain of more than fifteen leagues in front of the main land of Corea. They lie nearly north-east and south-west, and our observations place the northernmost in the latitude of $35^{\circ} 15'$ north, longitude $127^{\circ} 7'$ east. A thick fog concealed from us the continent, which is not more than five or six leagues distant; but we saw it the next day, about eleven o'clock. It appeared behind the islets or rocks, with which it was still skirted. Two leagues to the south of these islets our soundings were constantly thirty or thirty-five fathoms, muddy bottom: the sky too was always dull and whitish; but the sun pierced the haze, and we were able to take excellent observations for the latitude and longitude; which was of no small importance to the science of geography, since no European vessel is known to have traversed these seas, which are laid down on our maps of the world from Japanese or Corean charts, published by the Jesuits. It is true, these missionaries have corrected them by journeys on land, noted with great care, and subjected to excellent observations of longitude made at Pekin; so that their errors are not very considerable. And it must be confessed, that they have rendered essential services to the geography of this part of Asia, with which they alone have made us acquainted, and of which they have given us maps nearly approaching the truth: navigators have only to wish for hydrographical particulars, which the Jesuits could not insert in them, because they travelled by land.

1787.

May.

In the night of the 25th we passed the strait of Corea. After the sun went down we had set the coast of Japan, extending from east by north to east-south-east; and that of Corea, from north-west to north. The sea appeared very open to the north-east; and a pretty heavy swell setting from that quarter confirmed this opinion. The wind was south-west, blowing a light breeze, and the night very clear. We stood on before the wind under an easy sail, making not more than two knots an hour, that we

25.

1787. might have in sight at day-break the points we had set in the evening,
May. and be able to trace an accurate chart of the strait. Our bearings, subjected to the observations of M^r Dagelet, leave nothing to be wished respecting the accuracy of the plan we have given of it. We sounded every half hour; and as it appeared to me of more importance to follow the coast of Corea than that of Japan, I approached within two leagues of it, and steered my course parallel to it's direction.

The channel, which separates the continent from Japan, may be fifteen leagues wide; but it is narrowed to ten by rocks, which continued from Quelpaert Island to skirt the coast of Corea, and did not end till we had doubled the south-east point of the peninsula; when we could keep very close to the continent, see the houses and towns on the borders of the sea, and reconnoitre the entrances of the bays. On the tops of the mountains we saw some fortifications exactly resembling European forts; and it is probable, that the principal means of defence of the Coreans are directed against the Japanese. This part of the coast is extremely favourable to navigation, for we perceived no dangers, and found sixty fathoms of water, with a muddy bottom, three leagues in the offing: but the country is mountainous, and appears very much parched; the snow was not entirely melted in some of the clefts; and the land seemed little capable of cultivation. The houses, however, are very numerous; and we counted a dozen shampanes or junks, sailing along the coast. These junks appear not in the least to differ from those of the Chinese; and their sails are composed in like manner of mats. The appearance of our ships seemed to inspire them with very little fear: it is true, they were not far from the land, and could have reached the shore before we could get near them, if our proceedings had given them any mistrust. I greatly wished, that they would venture to speak to us: but they continued their course, without taking any notice of us; and the spectacle we afforded them, notwithstanding it's novelty, did not excite their attention. At eleven o'clock, however, I observed two boats sailing to reconnoitre us. They came within the distance of a league, followed us for two hours, and then returned to the harbour, from which they came in the morning. It is pro-

bable we occasioned some alarm on the coast of Corea, for in the afternoon we perceived fires lighted on all the points. 1787.
May.

This day, the 26th, was one of the finest and most interesting of our expedition, as we were enabled to take the bearings of more than thirty leagues of coast. Notwithstanding this fine weather, the barometer fell to twenty-seven inches ten lines; but as its indications had been erroneous several times, we continued our course till midnight along the coast, which we could discern by the light of the moon. The wind then chopped about from the south to the north into considerable violence, without the change being announced by any cloud. The sky was clear and serene, but it grew very black, and I was obliged to stand off the shore, that I might not be embayed by the easterly winds. If the clouds did not give us warning of this change, we had an indication of it, which we did not understand, and which it is not perhaps easy to explain. The men at the mast-head cried out, that they felt burning vapours, resembling those of the mouth of an oven, coming in puffs every half minute. All the officers went to the mast-head, and felt the same heat. The thermometer at that time was at 14° upon deck. We sent one up to the cross-trees, and it rose to 20° . These puffs of heat, however, passed with great rapidity, and in the intervals the temperature of the air did not differ from that of the temperature of the level of the sea. During the night we experienced a gale of wind from the north, which continued only seven or eight hours; but the sea ran very high.

As the channel between Corea and Japan must be tolerably wide in this latitude, we had nothing to fear from bad weather; and the next day I re-approached within three leagues of the continent. It was free from fog, and we made the points we had set the preceding evening. We had gained a little northing notwithstanding the strength of the wind, and the coast began to bend north-north-west; we had therefore passed the easternmost part, and explored the most interesting of the coasts of Corea. Accordingly I judged it adviseable, to direct my course for the south-west point of the island of Nippon; the north-east point of which, or Cape

1787. Nabo, had been accurately ascertained by the observations of captain King.
May. These two points will remove the uncertainty of geographers in future, who will have nothing left but the convolutions of the coast, on which to exercise their imaginations.

27. On the 27th I made the signal to bear up, and stand to the eastward. In a short time I saw to the north-north-east an island, which is not laid down upon any chart, and which appeared to be about twenty leagues distant from the coast of Corea. I endeavoured to get near it, but it was exactly in the wind's eye. Fortunately the wind changed in the night, and at daybreak I proceeded to reconnoitre the island, to which I gave the name of Dagelet, (*Charts and Plates*, N^o 45), in compliment to the astronomer, who was the first person that saw it. It is scarcely more than three leagues in circumference, and I sailed almost round it, at the distance of a mile, without finding any bottom; when I hoisted out a boat, and sent M^r Boutin to sound all the way to the shore. He did not get bottom with twenty fathoms water, till he reached the beginning of the waves that broke on the shore, when he was about a hundred toises from the island; the north-east point of which is in the latitude of $37^{\circ} 25'$ north, longitude $129^{\circ} 2'$ east. It is very steep, but covered with fine trees from the sea-shore to the summit. A rampart of bare rock, nearly as perpendicular as a wall, completely surrounds it, except seven little sandy coves, at which it is possible to land. In these coves we perceived some boats of the Chinese fashion on the stocks. The sight of our ships, which passed within point-blank shot, no doubt frightened the workmen, and they fled to the woods, which were not fifty paces from the place where they were at work. We saw nothing else but a few huts, without any village, or appearance of cultivation; so that probably some carpenters of Corea, which is not above twenty leagues from Dagelet Island, repair to it in summer with a stock of provision, to build boats, which they sell upon the continent. This opinion may be deemed little short of certainty: for, after we had doubled the western point, the workmen of another yard, who did not perceive the approach of the ship, because it was concealed by the point, were surprised by us near their pieces of timber, working on their boats; and

we saw them flee into the forest, two or three excepted, who appeared not in the least afraid.

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I wished to find an anchorage, that I might convince these people by acts of kindness we were not their enemies; but pretty strong currents drifted us from the land. Night coming on, and being apprehensive, that the ship might drive to leeward, and the boat with M^r Boutin be unable to join it, I was obliged to call him on board by a signal, just as he was going to land. Having rejoined the *Astrolabe*, which had been drifted considerably to the west by the currents, we spent the night in a calm, occasioned by the height of the mountains of Dagelet Island, by which the sea-breeze was intercepted.

END OF THE FIRST VOLUME.



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